

HENRY POOLEY & SON,



PRIZE

London	1851
London	1862
Paris (Class 53) ...	1867
Paris (Class 63) ...	1867
Naples	1871
Trieste	1871
Moscow (Gold) ...	1872
Moscow (Silver) ...	1872
Brussels (Do.) ...	1872
Manchester (Gold)	
Soc. Prom. Scien.	
Industry	1875

MEDALS.

Manchester and	
Liverpool	1867
Royal	1869
Royal	1870
Manchester and	
Liverpool	1871
Ayrshire	1876
Highland Soc. ...	1876
Royal Cornwall ...	1877

SOLE MAKERS OF

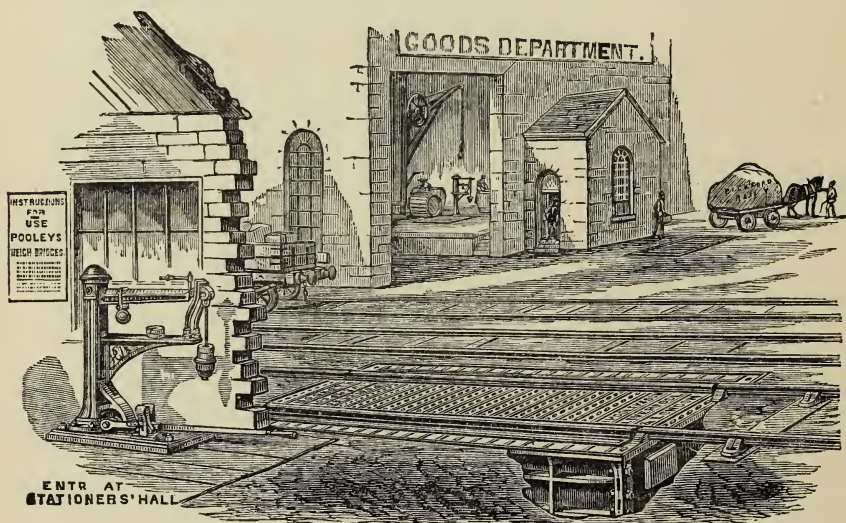
POOLEY'S

PATENT WEIGHING APPARATUS

FOR ALL

RAILWAY, COMMERCIAL, MANUFACTURING, AND MINING PURPOSES,
ADAPTED TO THE STANDARDS OF ALL NATIONS.

POOLEY'S PATENT SELF-INDICATING PIT BANK WEIGHING MACHINES, and
PATENT SELF-INDICATING AND SELF-CONTAINED RAILWAY WEIGH-BRIDGES.
MAKERS TO THE CHIEF RAILWAY COMPANIES IN THE UNITED KINGDOM.



WORKS: ALBION FOUNDRY, LIVERPOOL,
LONDON OFFICE: 89, FLEET STREET, E.C.

BRANCHES:

MANCHESTER, Fennel Street.

NEWPORT (Mon.) Commercial St.

NEWCASTLE-ON-TYNE, High Level Bridge

DERBY, Siddals Road.

GLASGOW, West Nile Street.

THE INDEX
TO
OUR RAILWAY SYSTEM
AND
OUR LEADING LINES:

A COMPREHENSIVE ANALYSIS OF RAILWAY PROPERTY.

SECOND NUMBER.

A Handbook for Shareholders and Investors,
AND ALL WHO ARE INTERESTED IN
RAILWAY ADMINISTRATION AND MANAGEMENT.

BY
WILLIAM FLEMING.

London :
M'CORQUODALE AND CO.,
CARDINGTON STREET, EUSTON SQUARE, N.W.; ST. THOMAS STREET, S.E.;
AND AT NEWTON, LIVERPOOL, LEEDS, AND GLASGOW.
And Sold by W. H. SMITH & SONS, 186, Strand, and at the Railway Book Stalls.
[Entered at Stationers' Hall.]

HALF-A-CROWN.]

M'CORQUODALE AND CO., PRINTERS, CARDINGTON STREET, LONDON, N.W

CONTENTS.

OUR RAILWAY SYSTEM—

	PAGE
CAPITAL, EXTENT OF LINE, AND COST, &c.	7
PASSENGER TRAFFIC	8
PARCEL TRAFFIC	10
GOODS TRAFFIC	13
GROSS RECEIPTS FROM ALL SOURCES	15
PROPORTION OF LINE TO AREA OF COUNTRY, &c.	15
WORKING EXPENDITURE	17
NET RECEIPTS, &c.	19
TAXED PROPORTION IN THE £ OF NET RECEIPTS	19
ROLLING STOCK	21
TRAIN SERVICE, BLOCK SYSTEM, ACCIDENTS, &c.	22
SUMMARY	23

OUR LEADING LINES—

CAPITAL, EXTENT OF LINE AND COST, &c.	27
PASSENGER TRAFFIC	30
GOODS TRAFFIC	33
GROSS RECEIPTS FROM ALL SOURCES	39
WORKING EXPENDITURE	43
NET RECEIPTS, &c.	49
ROLLING STOCK	57
WORKING STOCK EXPENDITURE	60
TRAIN SERVICE, BLOCK SYSTEM, ACCIDENTS, &c.	63
SYNOPSIS	67

GENERAL OBSERVATIONS	69
--------------------------------	----

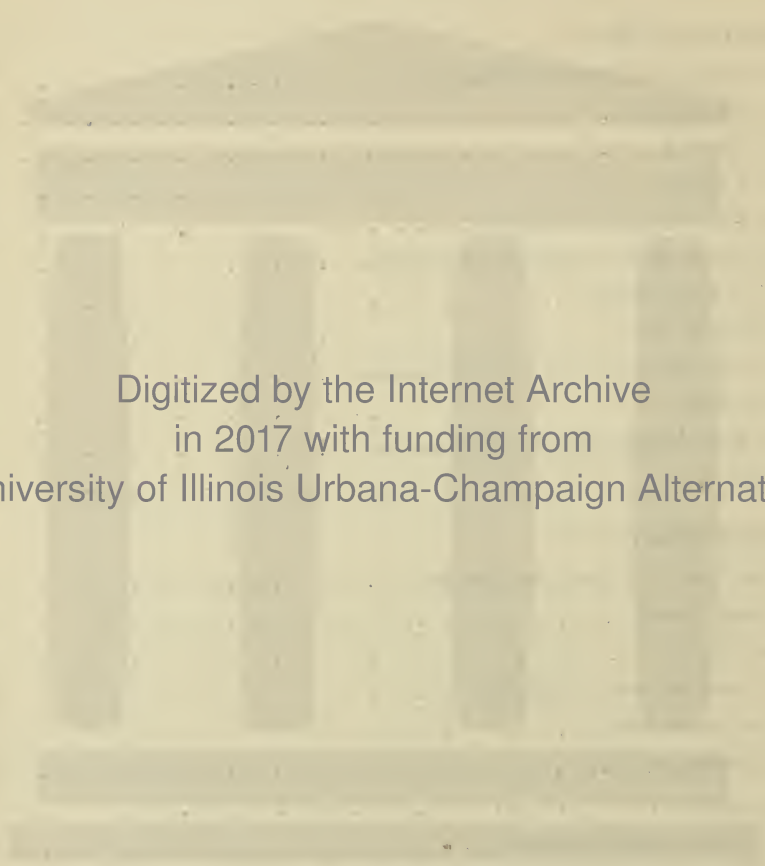
DRAFT FORM OF BOARD OF TRADE RAILWAY RETURNS	76
--	----

362164

175219 Broken

Comments 26 m 19 Clark 200

385.42
F6230



Digitized by the Internet Archive
in 2017 with funding from
University of Illinois Urbana-Champaign Alternates

P R E F A C E .

In the first number of this publication an analysis of railway property in the several divisions of the United Kingdom, and as applicable to the leading lines, was given for the years 1871, 1874, and 1875. The present work gives similar results for the year 1876—the latest period to which the Board of Trade returns are available. A somewhat fuller comparative analysis is given in the present than the previous instance, so as to put the results in a clearer light and render them more useful for reference to all who are interested in the intrinsic value of the several great railway undertakings.

The results of railway working during the year 1876 are satisfactory enough as an index of the condition of the country. In a period of comparative depression of trade, the traffic receipts of the railways are increased in every branch of business, the working charges are relatively less than in previous years ; but the disproportionate outlay of capital to the increase of receipts, both gross and net, have lessened the profits on the English and Scotch lines. Meantime, however, the profits of the Irish lines improved.

It is unfortunate that the Board of Trade returns give no details of the capital expenditure, whereby an analysis of the extent and direction of its application could be made. In this, as in other fundamental respects, the official returns of the Board of Trade are lamentably deficient. The question is one not only affecting shareholders and investors, but is so intimately associated with the social and commercial progress of the country that information commensurate to the interests at stake should be forthcoming. The returns of the railways of India and of some of our colonies far outstrip in useful and essential data those of the home lines.

That railway property is gradually deteriorating ; that railways, as the great carrying agency, have undeveloped capabilities, and that the commerce of the country is retarded in consequence ; will be made sufficiently apparent in the following pages to show that the demand for fuller and more explicit information is warranted and urgent.

OUR RAILWAY SYSTEM.

1. CAPITAL, EXTENT OF LINE, &c.

			ENGLAND.	SCOTLAND.	IRELAND.	UNITED KINGDOM.
Capital ...	Ordinary	£	216,207,544	29,560,832	16,240,447	262,008,883
	Guaranteed	"	70,272,152	10,185,909	321,610	80,779,671
	Preferential	"	117,704,236	24,070,572	6,353,513	148,128,321
	Debenture Stock & Loans	"	140,648,027	18,900,035	7,749,839	167,297,901
	Total	"	544,831,959	82,717,408	30,665,409	658,214,776
Proportion of Capital	Ordinary	%	39-68	35-74	52-96	39-81
	Guaranteed	"	12-90	12-31	1-05	12-27
	Preferential	"	21-60	29-10	20-72	22-50
	Debenture Stock and Loans	"	25-82	22-85	25-27	25-42
Length of Line	Double Line	Miles.	7,591	1,063	515	9,169
	Single Line	"	4,398	1,663	1,642	7,703
	Total	"	11,989	2,726	2,157	16,872
	Proportion Single	%	36-68	61-00	76-12	45-65
	Proportion of Capital per mile	£	45,444	30,344	14,217	39,012

During the year, the EXPENDITURE OF CAPITAL amounted to

£17,741,292, or 3·37 per cent., on the English lines,
 9,830,756 „ 13·49 „ „ „ Scotch „
 419,234 „ 1·38 „ „ „ Irish „
 27,991,282 „ 4·44 „ „ „ United Kingdom.

Of this increase, however, £7,661,838 is only nominal, being due to the consolidation of preference shares of one Scotch company and the division and exchange of stocks of another. The practical increase, therefore, in the capital of the Scotch lines is £2,168,918, or 2·98 per cent., and of the lines in the United Kingdom £20,329,444, or 3·22 per cent., an amount in the aggregate almost similar to that expended upon the lines in 1875.

The LENGTH OF LINE is increased by 200 miles in England, 5 miles in Scotland, 9 miles in Ireland, and 214 in the United Kingdom; and the PROPORTION OF DOUBLE AND SINGLE LINE remains nearly the same as in the previous year. There is 1·15 per cent. more double line in England, ·04 per cent. more in Scotland, ·18 per cent. more in Ireland, and ·93 per cent. more in the United Kingdom. The increase of capital, it is evident, therefore, has been rather in improvements and further equipment of existing lines than in any material addition to the extent of the railway system; consequently,

The AVERAGE COST PER MILE of line is increased by £734 in England, £3,557 in Scotland, £136 in Ireland, and £1,179 in the United Kingdom; but, allowing for the nominal increase of capital, the Scotch lines are actually increased by £746 and the lines of the United Kingdom by £725.

The PROPORTION OF ORDINARY STOCK to the total capital tends to lessen in each of the countries, thus lessening, as it were, the army of observation, or those having a direct and positive interest in the results of the general working; for, except as applied to those lines in default with their preference and debenture payments, any other than the holder of ordinary stocks have but a secondary and negative interest to look after. In considering railways as a great national property, it may be said to be an evil, both financially and

economically, that of the £658,214,776 involved, little more than 40 per cent. of the holders thereof should have a keen and sustained interest in the immediate results.

II.—PASSENGER TRAFFIC.

			ENGLAND.	SCOTLAND.	IRELAND.	UNITED KINGDOM.
Number of Passengers	First Class... ..	No.	38,302,841	4,693,843	1,862,382	44,859,066
	Second „	„	58,949,892	3,319,741	4,208,562	66,478,195
	Third „	„	383,686,658	31,978,057	11,285,319	426,950,034
	Total	„	480,939,391	39,991,641	17,356,263	538,287,295
	Season Tickets	„	345,656	26,481	22,290	394,427
Receipts from Passengers, &c.	First Class... ..	£	3,816,103	481,976	268,192	4,566,271
	Second „	„	3,121,985	229,392	307,739	3,659,116
	Third „	„	11,627,465	1,379,901	611,825	13,619,191
	Season Tickets	„	1,060,705	111,648	44,030	1,216,383
	Total	„	19,626,258	2,202,917	1,231,786	23,060,961
	Exc. Luggage, Prcls., &c.	„	2,076,490	237,115	104,452	2,418,057
	Mails	„	459,675	117,211	107,647	684,533
Gross		„	22,162,423	2,557,243	1,443,885	26,163,551
Average Fare per Head	First Class... ..	s. d.	1 11 $\frac{3}{4}$	2 0 $\frac{1}{2}$	2 10 $\frac{1}{2}$	2 0 $\frac{1}{2}$
	Second „	„	1 0 $\frac{3}{4}$	1 4 $\frac{1}{2}$	1 5 $\frac{1}{2}$	1 1 $\frac{1}{4}$
	Third „	„	0 7 $\frac{1}{4}$	0 10 $\frac{1}{4}$	1 1	0 7 $\frac{3}{4}$
	Mean	„	0 9 $\frac{1}{4}$	1 0 $\frac{1}{2}$	1 4 $\frac{1}{2}$	0 9 $\frac{3}{4}$
Average No. of Passengers per Mile of Line	First Class... ..	No.	3,195	1,721	863	2,659
	Second „	„	4,917	1,218	1,951	3,940
	Third „	„	32,003	11,731	5,232	25,305
	Total	„	40,115	14,670	8,046	31,904
	Season Tickets	„	29	9	10	23
Average Receipts from Passenger Trains per Mile of Line	First Class... ..	£	318	177	124	271
	Second „	„	260	84	143	217
	Third „	„	970	506	284	807
	Season Tickets	„	89	41	20	72
	Total	„	1,637	808	571	1,367
	Exc. Luggage, Prcls., &c.	„	173	87	48	143
	Mails	„	38	43	50	41
Gross		„	1,848	938	669	1,551
Average Receipts per Passenger Train Mile	First Class... ..	s. d.	0 10 $\frac{1}{4}$	0 10 $\frac{1}{2}$	0 10	0 10 $\frac{1}{4}$
	Second „	„	0 8 $\frac{1}{4}$	0 5	0 11 $\frac{1}{2}$	0 8
	Third „	„	2 7	2 6	1 10 $\frac{1}{2}$	2 6 $\frac{1}{4}$
	Season Tickets... ..	„	0 2 $\frac{3}{4}$	0 2 $\frac{1}{2}$	0 1 $\frac{1}{2}$	0 2 $\frac{1}{2}$
	Total	„	4 4 $\frac{1}{4}$	4 0	3 9 $\frac{1}{2}$	4 3 $\frac{1}{4}$
	Exc. Luggage, Prcls., &c.	„	0 5 $\frac{1}{2}$	0 5	0 3 $\frac{1}{2}$	0 5 $\frac{1}{2}$
	Mails	„	0 1 $\frac{1}{4}$	0 2 $\frac{1}{2}$	0 4	0 1 $\frac{1}{2}$
Gross		„	4 11	4 7 $\frac{1}{2}$	4 5 $\frac{1}{2}$	4 10 $\frac{1}{4}$
Proportion of Classes	First Class... ..	%	7.96	11.74	10.73	8.33
	Second „	„	12.26	8.30	24.25	12.35
	Third „	„	79.78	79.96	65.02	79.32
Proportion of Receipts	First Class... ..	„	19.44	21.88	21.77	19.80
	Second „	„	15.91	10.41	24.98	15.87
	Third „	„	59.25	62.64	49.67	59.06
	Season Tickets	„	5.40	5.07	3.58	5.27

The NUMBER OF PASSENGER JOURNEYS (exclusive of Season Ticket-holders) increased during the year: in England 6·63 per cent., in Scotland 2·36 per cent., in Ireland 2·86 per cent., and in the United Kingdom 6·17 per cent.

From 1871 to 1874 the average yearly increase was: in England 9·59 per cent., in Scotland 7·60 per cent., in Ireland 2·12 per cent.

During 1875 there was an increase in England of 6·60 per cent., in Scotland 2·22 per cent., in Ireland 2·04 per cent.

The English lines in the past year, therefore, maintained an increase equal to that of the previous year, the Scotch lines did relatively more, and the Irish lines did better still.

The efforts of Mr. Giffen to supply some definite information as to the number of passenger journeys represented by SEASON TICKET-HOLDERS have been, for the present, frustrated by many of the companies not complying with the request to give the equivalent annual number of such tickets issued. It is to be hoped that this will not occur again,—the companies, knowing now that this information will be asked for, should be ready and willing to furnish it.

The PROPORTION OF CLASSES indicate the usual falling-off in First and Second Class passengers. The number of Thirds relatively increased by 2 per cent. in England, $\frac{1}{2}$ per cent. in Scotland, 1·08 per cent. in Ireland, and 1·85 per cent. in the United Kingdom. Four-fifths of the passengers who travel on the lines in Great Britain go third class, and about two-thirds on the Irish lines.

PASSENGER TRAFFIC RECEIPTS, as a whole (including receipts from excess luggage, parcels, mails, &c.), have increased during the year by

£337,795, or 1·55 per cent. on the English lines,	
96,437 „ 3·92 „ „ Scotch lines,	
14,638 „ 1·02 „ „ Irish lines, and	
448,870 „ 1·74 „ „ United Kingdom.	

From 1871 to 1874, the average yearly increase was: in England 7·03 per cent., in Scotland 7·48 per cent., in Ireland 4·32 per cent.; and during 1875 the several increases upon 1874 were: in England 3·29 per cent., in Scotland 4·69 per cent., in Ireland 1·02 per cent.

The falling-off during the past, compared to the previous year, is very marked on the English lines, having barely half the ratio of increase, and in 1875 they had less than half the average yearly increase of the three preceding years. The Scotch lines have held their ground better, with 3·92 per cent. of increase in 1876, and 4·69 per cent. increase in 1875, as against an average yearly increase of 7·48 per cent. in the three previous years. The Irish lines in the past, as in the previous year, increased at the rate of 1 per cent., as against an average yearly rate of increase of 4·32 per cent. between 1871 and 1874.

The PROPORTION OF RECEIPTS from Third Class passengers has increased by 2 per cent. on the English lines, ·87 per cent. on the Scotch lines, 1·09 per cent. on the Irish lines, and 1·86 per cent. on the whole railway system. Taking the United Kingdom as a whole, the proportion of receipts from First and Second Class have declined about equally (one per cent. of each). The receipts from Season Ticket-holders have increased ·21 per cent. on the English lines, ·13 per cent. on the Scotch lines, ·16 per cent. on the Irish lines, and ·20 per cent. in the United Kingdom.

The AVERAGE NUMBER OF PASSENGERS PER MILE OF LINE increased by

1,856 on the English lines,
312 on the Scotch lines,
190 on the Irish lines, and
1,470 on the United Kingdom.

The AVERAGE RECEIPTS FROM PASSENGERS PER MILE OF LINE decreased by £6 on the English lines, while the Scotch and Irish lines increased by £28 and £4 respectively, and by the latter figure for the whole United Kingdom.

The AVERAGE RECEIPTS FROM PASSENGER TRAINS PER MILE OF LINE are likewise decreased by £3 on the English lines, increased by £34 and £4 on the Scotch and Irish lines respectively, and increased by £7 in the United Kingdom.

The AVERAGE RECEIPTS PER PASSENGER TRAIN-MILE show a general reduction, amounting to $1\frac{1}{4}$ d. in England, $\frac{1}{2}$ d. in Scotland, $1\frac{1}{4}$ d. in Ireland and the same for the United Kingdom, upon 1875, and in that year the English lines were 1d. under 1874. These figures may appear insignificant, but a glance at the millions of train-miles run will qualify the impression.

The AVERAGE FARE PER HEAD for First Class passengers has

decreased by 2d. in England,
increased by $\frac{1}{2}$ d. in Scotland,
is stationary in Ireland, and
decreased by $1\frac{1}{2}$ d. in the United Kingdom ;

for Second Class there is

an increase of $\frac{1}{4}$ d. in England,
a decrease of $\frac{3}{4}$ d. in Scotland,
a decrease of $\frac{1}{4}$ d. in Ireland, and
an increase of $\frac{1}{4}$ d. in the United Kingdom ;

while for Third Class there is a general decrease of a farthing. The mean fare of all classes is less by $\frac{1}{2}$ d. in England and Ireland, and more by $\frac{1}{4}$ d. in Scotland. The mean fare of all classes that stood at $11\frac{1}{4}$ d. in 1871, $10\frac{1}{4}$ d. in 1874, $10\frac{1}{4}$ d. in 1875, is now $9\frac{3}{4}$ d. for the whole kingdom. After all, however, it is only by conjecture that anything can be learned from this ; it cannot be positively stated whether this reduction is the result of extra inducements in the form of cheaper fares in a greater number of instances or of an increasing number of short journeys each year. What is really wanted to be known is the average length of each journey and the average fare of each class per mile, data that is supplied in the official returns of other countries, but is declined by the Board of Trade ; or, as Messrs. Calcraft and Giffen, in their General Report of the Railways, naively say, " if the companies gave returns of the number of the different classes of passengers carried one mile," as if the companies ever furnished any information without being asked, and oftentimes pressed, for it. It is a ray of hope, however, to have even so much admitted, although not more than what would be expected from the head of the Statistical Department in the Board of Trade.

Before disposing of the matter of Passenger Traffic, there is the item of PARCEL TRAFFIC to which attention may be drawn. With receipts from parcel traffic, those derived from excess passengers' luggage, horses, carriages, dogs, &c., are mixed up, consequently no accurate account can be got regarding them—neither the average weight, distance carried, nor cost per parcel or

per mile. Looking at the money set down for parcels and these other miscellaneous receipts grouped with them,—£2,418,057 for the past year for the whole United Kingdom,—it must be apparent at once that parcel traffic by passenger trains has not become a conspicuous element in railway business. Assuming that one-and-a-half millions sterling, which is probably a liberal figure, has been derived from parcels, and taking the very low figure of 6d. as the average rate, it will give sixty millions as the number carried in the year, or about TWO per head of the population,—a very small average when compared with the Postmaster-General's report of the annual number of letters, of book-packets, newspapers, and post-cards carried, as well as compares unfavourably with the proportion of passenger journeys and passenger receipts, as per head of the population, in any of the countries.

The Scotch lines are showing a relatively greater progress from parcel traffic than the English lines every year since 1871, but, nevertheless, it would appear as if this parcel traffic was being treated in some way like to what was meted out to the third class passenger before the initiation of the better policy by the Midland. Parcel traffic arrangements have been for many years a perplexing question to the railway companies, and a highly unsatisfactory one to the public. The Parcels Delivery Companies, Carriers, and others, outside the companies, have taken advantage of their every movement, the great feature being that of packing a number of small parcels for the same place, consigning them to their corresponding agencies, and paying themselves out of the relatively lesser rate charged for a large than a small parcel. The companies have put as many drawbacks as possible in the way of this and like arrangements, which they looked upon as a serious loss to them, as an infringement of their rights, and an improper advantage taken of privileges intended to operate as between themselves and the public, and, consequently, something to be strenuously discouraged at all hazards. The result has been that much of what, in the ordinary course, would have gone by passenger trains has been diverted from its legitimate channel and forwarded as goods traffic, by slower trains, entailing delay and more or less uncertainty in delivery. The amount of parcel traffic treated in this way there are no means of finding out; but there is no question that this applies to the greater proportion. At the same time, the companies, who have lately been revising the parcels question, have rated packed parcels in the highest merchandise class, and, by resorting to a kind of subterfuge, when a number of parcels from one consignor to one consignee are sent loose and under 500 lbs. weight, they have added 25 per cent. to this highest rate. All this does not appear very equitable, nor bespeak much commercial sagacity or foresight in railway administration. Every impediment put in the way must be looked upon, in the event, as a serious hindrance to the promotion of the traffic involved, and, in short, as a grave dereliction of the duty they owe to the public as practical monopolists of the carrying business of the country. It may almost be said that it has been by virtue of the agencies outside the companies, in spite of official restrictions and charges, parcel traffic has existed to any extent at all. Expedition and punctuality in delivery are essential elements in the proper conduct of such a matter as parcel traffic—the object to be arrived at should be, first, cheapness, and, next, the carriage and delivery with the same regularity as letters and book-packets. It would be a waste of words to attempt to show that these conditions have been fulfilled: the very opposite has been the fact.

If the companies would but recognise parcel traffic as essentially different

from other (passenger or goods) traffic, consider that parcels are allied, in great measure, rather to letters and book-packets, that they are transmitted hither and thither as much as a matter of pleasure or convenience as of necessity, they would readily solve the difficulty of external agencies competing against them, in a more business-like manner than they do now. If they had the courage to throw off the yoke of a mileage basis of rates, or zones of distances, come to a common understanding amongst themselves, and constitute a PARCELS CONVENTION, establish a uniform rate for a given weight, irrespective of distance, like the postal and telegraphic service, their trouble and expense would be less and their profits great, compared to the comparatively paltry sum now derived. In the first place, it would put all opposition, as such, to the companies out of the field, and the uniformity of the rate, like the penny post and shilling telegram, would throw a definiteness and form into the public mind such as no other scheme could parallel towards popularising and promoting the traffic. There is a field of wealth here lying waste, only waiting the opportunity to burst into a profitable harvest, with the least proportionate outlay. At all events, if the Postmaster-General felt himself at liberty, or if a Parliamentary pressure was brought to bear upon him—and such a pressure, from the highly unsatisfactory condition of the question, is not unlikely to arise if the companies insist IN PURSUING THEIR PRACTICALLY PROHIBITORY AND ERRATIC POLICY—to add to the business of letters, post-cards, circulars, book and sample post this matter of parcel traffic, at relatively low, uniform rates, to the extent even of 7 or 14 or up to 28 lbs. weight, he would soon find himself commanding a success that would be the despair of railway administrators in not previously adopting and reaping the full advantages of some such comprehensive plan. There is no insurmountable difficulty to be overcome, no violent changes in existing organisations necessary, but rather their extension and freer working. Railway managers are already to some extent in the groove; they have but to be equal to themselves, to rise a little more to the occasion, superior to the incrustations of time and habit regarding differential rates and classes and distances, and the traffic that is now so miserably dealt with and held back will flow freely, and increase the paying weight of their passenger trains. The quantity of new traffic would recoup the companies, even if carried at what, at first sight, might appear a fabulously low price, like the penny post when first suggested.

It would be a necessary feature in such a scheme that all parcels should be prepaid—by stamps. Commercial houses and business people would supply themselves with these parcel stamps as they do with postage stamps and post-cards now. A parcel would be despatched with the same freedom and confidence as a letter, as a mere matter of course, upon the least requirement: the cost being a definite and known quantity and the service regular, the inducement would be complete.

That parcel traffic, under a system of this kind, would obtain dimensions far beyond its present limited and dwarfed proportions there can be no manner of doubt, and would be in kind with the improvement in railway earnings consequent on the carrying of third class passengers by all trains, over and above the social and economical advantages that would accrue to the country.

Mr. Parsloe, however, says, "The Railways, Telegraphs, and Post Office are kindred institutions, and not until they are worked in complete unison can

we derive from either the full measure of benefit which it is capable of affording," and probably he is right.

III.—GOODS TRAFFIC.							
			ENGLAND.	SCOTLAND.	IRELAND.	UNITED KINGDOM.	
Tons Carried	Merchandise	Tons.	57,279,170	6,733,166	2,908,145	66,920,481	
	Minerals	"	116,412,568	22,019,974	612,041	139,044,583	
	Total	"	173,691,738	28,753,140	3,520,186	205,965,064	
Receipts from Goods Trains	Merchandise	£	16,008,508	1,998,267	996,381	19,003,156	
	Minerals	"	11,496,849	1,948,395	74,969	13,520,213	
	Live Stock... ..	"	836,372	173,038	221,538	1,230,948	
	Total	"	28,341,729	4,119,700	1,292,888	33,754,317	
Average Rate per Ton.	Merchandise	s. d.	5 7	5 11½	6 10½	5 8½	
	Minerals	"	1 11½	1 9½	2 5½	1 11½	
	Mean	"	3 2	2 9	6 1	3 2	
Average No. of Tons per Mile of Line.	Merchandise	Tons.	4,778	2,470	1,348	3,966	
	Minerals	"	9,710	8,078	284	8,241	
	Total	"	14,488	10,548	1,632	12,207	
Average Receipts per Mile of Line.	Merchandise	£	1,335	733	462	1,126	
	Minerals	"	959	715	35	801	
	Live Stock... ..	"	70	63	103	73	
	Total	"	2,364	1,511	600	2,000	
Average Receipts per Train Mile	Merchandise	s. d.	3 6½	2 8½	6 0½	3 6½	
	Minerals	"	2 6½	2 7½	0 5½	2 6	
	Live Stock... ..	"	0 2½	0 2½	1 4½	0 2½	
	Total	"	6 3½	5 7	7 10½	6 3	

In the TONNAGE carried their has been

an increase of 4,715,995 tons, or 2·79 per cent., in England, principally minerals ;

an increase of 1,013,446 tons, or 3·65 per cent., in Scotland, made up of both merchandise and minerals

an increase of 165,972 tons, or 4·95 per cent., in Ireland, altogether in merchandise, the minerals

being actually less by 67,000 tons; and an increase of 5,895,413 tons, or 2·94 per cent., in the United Kingdom. The percentage increase of tonnage is little more than half during the past year what it was (5 per cent.) in 1875 on the English lines, the increase on the Scotch lines is still less (13·24 per cent. in 1875), while the Irish lines were well up to the increase of 1875 (7·47 per cent.).

The RECEIPTS FROM GOODS TRAFFIC during the year increased

£394,438,	or 1·41 per cent.,	on the English lines,
2,775	" 07	" " Scotch lines,
89,032	" 7·39	" " Irish lines, and
486,245	" 1·46	" " United Kingdom ;

the increase on the English lines being principally from merchandise; altogether, such as it is, from merchandise on the Scotch lines (notwithstanding the greater tonnage of minerals there were actually less receipts derived from it); and the increase on the Irish lines was from merchandise and live stock.

The receipts from goods traffic between the years 1871 to 1874 improved at an average yearly rate of 6·88 per cent. on the English lines, 8·14 per cent. on the Scotch lines, 4·67 per cent. on the Irish lines, and 6·95 per cent. in the United Kingdom; and the year 1875 showed an increase upon 1874 of 3·45 per cent. on the English lines, 5·99 per cent. on the Scotch lines, 8·73 per cent. on the Irish lines, and 3·94 per cent. in the United Kingdom.

Goods traffic has indicated even less buoyancy on the English lines than the passenger traffic; the increase is but nominal on the Scotch lines; while the Irish lines in the past, as in the previous year, have exhibited a hopeful elasticity.

The AVERAGE NUMBER OF TONS PER MILE OF LINE is

- less by 168 in merchandise and more by 323 in minerals on the English lines;
- more by 152 in merchandise and more by 202 in minerals on the Scotch lines;
- more by 103 in merchandise and less by 32 in minerals on the Irish lines; and
- less by 74 in merchandise and more by 271 in minerals on the United Kingdom.

The AVERAGE RECEIPTS PER MILE OF LINE on the English and Scotch lines are practically the same as in the previous year, while the Irish lines are increased by £39, chiefly from merchandise.

The AVERAGE RECEIPTS PER GOODS TRAIN-MILE remain stationary on the English lines, are increased by $\frac{3}{4}$ d. on the Scotch lines, and $8\frac{1}{2}$ d. on the Irish lines, the latter from the extra merchandise traffic.

The AVERAGE RATE PER TON of merchandise on the English lines is $2\frac{1}{4}$ d. over 1875, minerals $\frac{3}{4}$ d. less, and the mean rate for merchandise and minerals $\frac{1}{2}$ d. less; on the Scotch lines the rate per ton received for merchandise is $4\frac{1}{2}$ d. less, for minerals $\frac{1}{2}$ d. less, and the mean rate of both 1d. less; on the Irish lines there is an increase of $\frac{1}{2}$ d. in merchandise, an increase of 2d. in minerals, and an increase in the mean rate of both of $2\frac{1}{4}$ d.; in the United Kingdom there is an increase of $1\frac{3}{4}$ d. from merchandise, a decrease of 1d. from minerals, and a decrease in the mean rate of both of $\frac{1}{2}$ d.

The same remarks apply to the average rate per ton of merchandise and minerals, and of both combined, as to the mean fare per passenger. The principal factor is wanting, namely, the average distances merchandise and minerals are respectively carried; there is consequently little meaning to be derived from, or value to be attached to, such superficial results as can be arrived at. It is tantalising, but unavoidable, from the present unsatisfactory form of the official statements, alike of the companies and the Board of Trade, to have to submit to such barren statistics on such an important matter. From the reduced rate received per ton for the carriage of merchandise on the Scotch lines, coincident with a decrease, in both England and

Scotland, of the rate per ton received from minerals, one of two causes must be set down to account for it: either the average distance carried has been shorter, or lower rates prevailed. As distances can hardly be supposed to have been so universally shorter during the year, the latter conjecture is probably nearer the truth. And this, then, opens up the collateral question of whether competitive rates having been generally adopted to press traffic, how far it has contributed to keeping up the rate of expenditure, which, although relatively less, is still high: but further inquiry in this direction is stopped for want of any data whatever that would assist in such an investigation.

IV.—GROSS RECEIPTS.

		ENGLAND.	SCOTLAND.	IRELAND.	UNITED KINGDOM.	
Passenger and Goods Traffic	£	50,504,152	6,676,943	2,736,773	59,917,868	
Miscel., Rents, Tolls, Navigation, &c.	„	1,972,167	288,148	37,592	2,297,907	
Total	„	52,476,319	6,965,091	2,774,365	62,215,775	
Gross Traffic Receipts per Mile of Line	„	4,212	2,449	1,269	3,551	
Mean of Traffic Receipts per Train Mile	s. d.	5 7¼	5 2	5 7¼	5 6½	
Proportion of Gross Receipts.	Passengers	%	37.40	31.63	44.40	37.07
	Parcels, &c.	„	3.96	3.41	3.76	3.89
	Mails	„	0.87	1.68	3.88	1.10
	Passenger Traffic ...	„	42.23	36.72	52.04	42.06
	Merchandise	„	30.51	28.69	35.91	30.54
	Minerals	„	21.91	27.97	2.70	21.73
	Live Stock... ..	„	1.59	2.48	7.99	1.98
	Goods Traffic	„	54.01	59.14	46.60	54.25
Miscellaneous	„	3.76	4.14	1.36	3.69	

IVa.—PROPORTION of Line to Area of Country and (Estimated) Population; and Proportion of Journeys, Tonnage, and Receipts per Head of Population.

			ENGLAND.	SCOTLAND.	IRELAND.	UNITED KINGDOM.	
Area of Country per Mile of Line ...		Sq. m.	4.86	11.26	15.08	7.20	
Proportion of Pop. per Mile of Line ...		No.	2,022	1,294	2,465	1,961	
Proportion of Pass. Journeys to Pop. ...		„	19.84	11.33	3.26	16.27	
Proportion of Tonnage to Population...		„	7.16	8.15	0.66	6.22	
Average Receipts per Head of Population.	{	Passengers... ..	s. d.	0 16 2¼	0 12 5¾	0 4 7½	0 13 11¼
		Parcels, &c.	„	0 1 8½	0 1 4¼	0 0 4¾	0 1 5½
		Mails	„	0 0 4½	0 0 8	0 0 4¾	0 0 5
		Merchandise	„	0 13 2½	0 11 4	0 3 9	0 11 5¾
		Minerals	„	0 9 5½	0 11 0½	0 0 3½	0 8 2
		Live Stock... ..	„	0 0 8¼	0 0 11¾	0 0 10	0 0 9
Total		£ s. d.	2 1 7¾	1 17 10¼	0 10 3½	1 16 2½	
Proptn. of Capital outlay to Population		„	22 9 5½	23 8 11¼	5 15 4	19 17 10	

GROSS RECEIPTS, including miscellaneous items of income, are increased by

£749,903, or 1·45 per cent., on the English lines,	
125,661 „ 1·84 „ „	Scotch lines,
103,211 „ 3·86 „ „	Irish lines, and
978,775 „ 1·60 „ „	United Kingdom.

In 1875, compared with 1874, the ratio of increased receipts was TWO-AND-A-HALF TIMES greater on the English lines and nearly FOUR TIMES greater on the Scotch lines than the foregoing results of the past year. The Irish lines, however, were within $\frac{1}{2}$ per cent. of being equal to the increase of the previous year.

GROSS TRAFFIC RECEIPTS PER MILE OF LINE are

Less by £10 on the English lines,
More by £32 on the Scotch lines,
More by £43 on the Irish lines, and
More by £10 on the United Kingdom.

The MEAN TRAFFIC RECEIPTS (PASSENGER AND GOODS) PER TRAIN-MILE are $1\frac{1}{4}$ d. less on the English lines, stationary on the Scotch lines, increased by $1\frac{1}{4}$ d. on the Irish lines, and less by $\frac{3}{4}$ d. in the United Kingdom, compared with the previous year.

The PROPORTION OF GROSS RECEIPTS shows that the English lines earned nearly the same relative amounts from passenger and goods traffic respectively as in the previous year, the Scotch lines have relatively earned $\frac{2}{3}$ per cent. more from passenger traffic, and the Irish lines $1\frac{1}{2}$ per cent. more from goods traffic.

The English and Irish lines had a falling-off in their MISCELLANEOUS (other than traffic) sources of income, while the Scotch, on the contrary, had a material increase of '78 per cent. to help their light increase from traffic proper.

The miscellaneous items of income and expenditure are thrown into the official returns in such tangled form that really no information can be gained as to the profit and loss under the several heads. On the expenditure side of the account, Steamboat, Canal, and Harbour expenses are given; but on the side of receipts, Miscellaneous, Rents, Tolls, Navigation, Steamboats, &c., are grouped together with no apparent correspondence, except that it may reasonably be assumed that it is useful to group the receipts as a cover for the losses perhaps sustained on the Steamboat and Canal services. The revenue derived severally from Rents, Tolls, Navigation, Steamboats, and the corresponding expenditure in each case, should be clearly and explicitly given; all doubts would then be removed, and the best or worst side of each part of the business thoroughly understood. Moreover, the capital accounts of the companies should be so set out that the several amounts as representing Railway, Canal, Steamboat, or any other business, could be readily seen, and the relative profit or loss on each discovered at once. Lump results, want of order and completeness, are the bane of our railway accounts.

V.—WORKING EXPENDITURE.

		ENGLAND.	SCOTLAND.	IRELAND.	UNITED KINGDOM.
Gross Working Expenditure	Maintenance of Way, &c.	£ 5,470,632	796,804	432,481	6,699,917
	Locomotive Power	7,207,873	869,378	368,535	8,445,786
	Repairs, Carriages & Wgns.	2,248,578	355,554	114,253	2,718,385
	Traffic Charges... ..	8,456,469	986,737	355,521	9,798,727
	General Charges	1,115,544	139,450	74,079	1,329,073
	Rates and Taxes	1,096,404	130,789	67,915	1,295,108
	Government Duty	669,467	58,749	...	728,216
	Compensation—Passngs.	287,201	25,330	7,335	319,866
	Do. Goods	289,017	24,036	10,896	323,949
	Legal & Parly. Expenses	229,194	25,472	13,158	267,824
	Steamboat, Canal, &c.	962,483	95,212	5,085	1,062,780
	Miscellaneous	433,504	90,482	21,892	545,878
	Total	28,466,366	3,597,993	1,471,150	33,535,509
Expenditure per Mile of Line... ..		2,294	1,285	680	1,924
Expenditure per Train Mile	Way, Works, &c.	d. 7-29	7-41	10-64	7-45
	Locomotive Power	9-60	8-08	9-06	9-40
	Repairs, Carriages & Wgns.	3-00	3-31	2-81	3-02
	Traffic Charges... ..	11-27	9-18	8-74	10-90
	General Charges	1-48	1-30	1-82	1-48
	Rates and Taxes	1-46	1-22	1-67	1-44
	Government Duty	0-89	0-54	×	0-81
	Compensation—Passngs.	0-38	0-23	0-18	0-36
	Do. Goods	0-38	0-22	0-27	0-36
	Legal & Parly. Expenses	0-30	0-24	0-32	0-30
	Miscellaneous	0-58	0-84	0-54	0-51
	Total	36-63	32-57	36-05	36-13
Proportion of Expenditure to Gross Receipts from Trains	Way, Works, &c.	% 10-83	11-94	15-80	11-18
	Locomotive Power	14-27	13-02	13-47	14-09
	Repairs, Carriages & Wgns.	4-45	5-32	4-18	4-54
	Traffic Charges... ..	16-74	14-78	12-99	16-35
	General Charges	2-21	2-09	2-70	2-22
	Rates and Taxes	2-17	1-96	2-48	2-16
	Government Duty	1-33	0-88	×	1-22
	Compensation—Passngs.	0-57	0-38	0-27	0-53
	Do. Goods	0-57	0-36	0-40	0-54
	Legal & Parly. Expenses	0-45	0-38	0-48	0-45
	Miscellaneous	0-86	1-35	0-80	0-91
	Total	54-45	52-46	53-57	54-19
Proportion of Expenditure to Gross Receipts from all sources... ..		54-25	51-66	53-03	53-90

WORKING EXPENDITURE, compared with the previous year, is increased

£245,871, or '87 per cent., on the English lines,
 55,308 „ 1'56 „ „ Scotch lines,
 13,602 „ '93 „ „ Irish lines, and
 314,781 „ '95 „ in the United Kingdom.

EXPENDITURE PER MILE OF LINE IS

£22 less on the English lines,
 19 more on the Scotch lines,
 3 „ „ Irish lines, and
 9 less in the United Kingdom.

EXPENDITURE PER TRAIN-MILE IS

·90d. less on the English lines,
 nearly stationary on the Scotch lines,
 ·40d. less on the Irish lines, and
 ·75d. „ United Kingdom.

PROPORTION OF EXPENDITURE TO GROSS TRAFFIC RECEIPTS IS

·40 per cent. less on the English lines,
 ·08 „ more on the Scotch lines,
 1·62 „ less on the Irish lines, and
 ·39 „ „ United Kingdom.

PROPORTION OF EXPENDITURE TO GROSS RECEIPTS FROM ALL SOURCES IS

·31 per cent. less on the English lines,
 ·14 „ more on the Scotch lines,
 1·53 „ less on the Irish lines, and
 ·25 „ „ United Kingdom.

To go a little closer into the meagre results that are obtainable, it will be found that

Primary Working Charges—Way, Works, &c., Locomotive Power, Repairs, and Traffic Charges—in proportion to receipts, are

·43 per cent. less on the English lines—principally
 in locomotive power,
 ·17 per cent. less on the Scotch lines,
 1·42 „ „ Irish lines, and
 ·44 „ „ United Kingdom.

Secondary Charges—General Charges, Rates and Taxes, Government Duty, Compensation, &c.—are the same on the English lines as for the previous year, ·25 per cent. more, principally for personal injury, on the Scotch lines, and ·20 per cent. more on the Irish lines.

The proportion of gross expenditure per mile of line, as a set-off to the gross income per mile of line; the proportion of expenditure per train-mile, as a set-off to the mean earnings per train-mile; and the proportion of gross expenditure to gross receipts, are all well enough for ROUGH TALLIES of the external results of railway working, but they cannot by any means be taken as true statistical data of any definite value or practical importance, leading to any real insight into the internal parts of the organisation. They are worthless to the investigator who wants to look beneath the surface. The gross mileage of passenger journeys; the ton-mileage of merchandise traffic and of mineral traffic respectively; the separation of working expenses coincident to the three main elements, at the very least, of passenger, merchandise, and mineral traffic: these are what are required before any real knowledge can be gained of the interior economy.

VI.—NET RECEIPTS, &c.

		ENGLAND.	SCOTLAND.	IRELAND.	UNITED KINGDOM.
Net Receipts from all sources	£	24,009,953	3,367,098	1,303,215	28,680,266
Do. from Trains	„	23,000,269	3,174,162	1,270,708	27,445,139
Do. do. per Mile	„	1,918	1,164	589	1,627
Do. do. per Train-mile	s. d.	2 6½	2 5½	2 7¼	2 6½
Proportion of Gross Receipts to Capital	%	9·63	8·42	9·05	9·45
Do. Expenditure do.	„	5·22	4·35	4·80	5·09
Do. Net Receipts do.	„	4·41	4·07	4·25	4·36
Do. do. from Trains do.	„	4·22	3·84	4·14	4·17

Via.—TAXED PROPORTION in the £ of NET RECEIPTS.

		ENGLAND.	SCOTLAND.	IRELAND.	UNITED KINGDOM.
Rates and Taxes	s. d.	0 10½	0 8½	0 11¾	0 10
Government Duty	„	0 6¼	0 4	X	0 5¾
Income Tax	„	0 3	0 3	0 3	0 3
Total	„	1 7½	1 3¾	1 2¾	1 6¾

NET RECEIPTS FROM ALL SOURCES increased during the year
 £504,032, or 2·14 per cent., on the English lines,
 70,353 „ 2·13 „ „ Scotch lines,
 89,609 „ 7·38 „ „ Irish lines, and
 663,994 „ 2·37 „ „ United Kingdom.

NET RECEIPTS FROM TRAINS are increased
 £527,563, or 2·35 per cent., on the English lines,
 42,243 „ 1·35 „ „ Scotch lines
 90,776 „ 7·70 „ „ Irish lines, and
 660,582 „ 2·46 „ „ United Kingdom.

NET RECEIPTS PER MILE OF LINE are increased by
 £12 on the English lines,
 13 „ Scotch lines,
 40 „ Irish lines, and
 19 „ United Kingdom.

NET RECEIPTS PER TRAIN-MILE are ½d. under the two previous years on the English lines; the Scotch are the same as in 1875; the Irish lines are 1½d. more than the previous year—they exceed the English lines by ¾d. as the English lines exceed the Scotch by 1d.

THE PROPORTION OF GROSS RECEIPTS TO CAPITAL, for the sake of clearer reading, may be tabulated thus:—

	1874.	1875.	1876.
English lines ...	9·87 per cent.	9·81 per cent.	9·63
Scotch „ ...	9·09 „	9·38 „	8·42 (corrected, 9·27)
Irish „ ...	8·60 „	8·83 „	9·05
United Kingdom ...	9·71 „	9·73 „	9·45

It is again to be observed that the ominous feature that made its appearance in 1873 was no transient one, but remains pronounced enough to warn all interested in railway property of the steady depreciation going on from capital being expended at a more rapid rate than the increased flow of traffic. This backward movement amounts to the not inconsiderable figure of $\cdot 18$ per cent. in the past, compared with the previous year, and $\cdot 24$, compared with 1874, on the gross capital of the English lines. The proportion of gross receipts to capital that stood at the improved point of $9\cdot 38$ per cent. in 1875 ($\cdot 29$ per cent. more than in 1874), now appears as $8\cdot 42$ per cent. on the Scotch lines, subject, however, to correction of the nominal increase of capital, which brings it to $9\cdot 27$ per cent., or $\cdot 11$ per cent. under the previous year. The Irish lines, on the other hand, show the same rate of increase in the past as in the previous year ($\cdot 22$ per cent.), the outlay of capital upon them appearing more judicious and remunerative.

PROPORTION OF EXPENDITURE TO CAPITAL.

	1874.	1875.	1876.
English lines ...	$5\cdot 41$ per cent.	$5\cdot 35$ per cent.	$5\cdot 22$
Scotch lines ...	$5\cdot 10$ „	$4\cdot 86$ „	$4\cdot 35$ (corrected, $4\cdot 79$)
Irish lines ...	$4\cdot 84$ „	$4\cdot 82$ „	$4\cdot 80$
United Kingdom ...	$5\cdot 34$ „	$5\cdot 27$ „	$5\cdot 09$

The English lines indicate a steady relative decrease each year (decrease of profits cannot be put down to a relatively greater expenditure); the Scotch lines decreased relatively nearly $\frac{1}{4}$ per cent. in 1875 upon 1874, but, after allowing for the nominal increase of capital, the decrease in the past year is but $\cdot 07$ per cent.; the Irish lines maintain all round about the same relative expenditure, but tending downwards.

PROPORTION OF NET RECEIPTS TO CAPITAL.

	1874.	1875.	1876.
English lines ...	$4\cdot 46$ per cent.	$4\cdot 46$ per cent.	$4\cdot 41$
Scotch lines ...	$3\cdot 99$ „	$4\cdot 52$ „	$4\cdot 07$ (corrected, $4\cdot 18$)
Irish lines ...	$3\cdot 76$ „	$4\cdot 01$ „	$4\cdot 25$
United Kingdom ...	$4\cdot 37$ „	$4\cdot 45$ „	$4\cdot 36$

The disproportionate increase of capital to the expansion of traffic, notwithstanding the relative reduction of expenditure, leaves its mark in the reduced profits of the English and Scotch lines. Allowing for the nominal increase of capital the proportion of net receipts to capital on the Scotch lines is a shade higher than on the English lines during the past two years. The Irish lines show a steady and satisfactory increase of $\frac{1}{4}$ per cent. in the past and in the previous year. It is a peculiar contrast to find the Irish lines, with their comparatively meagre traffic, coming forward in so much healthier condition than the British lines, with their immensely greater weight and variety of traffic. Can it be possible that this is the result of forcing traffic with unremunerative rates, merely to show an increase of receipts as a set-off to the capital outlay, and to throw dust in the eyes of the shareholders and the public—is it this that is leading the British lines into mischief? Whatever it is, it shows the urgent necessity of information being supplied of such a kind and in such a manner that actual, practical, valuable knowledge can be gained into every detail of their internal economy. It is a very striking and abnormal condition of things to find, taking the United Kingdom as a whole, that, during a period of comparative cessation in railway extension, capital is being expended twice as quick as traffic increases, and, withal that the actual

increase in the expenditure is little more than half the proportion of increased traffic, that the profits are less. The most superficial glance at the facts here presented must convince any one that implicit confidence in railway stocks as sound securities is entirely misplaced. The evil, too, is heightened by the doubts that arise whether the relative decrease of expenditure is not more apparent than real—whether, in fact, revenue is not relieved of part of its legitimate burdens and surcharged to capital—and this receives very considerable colour from the enormous increase of the WORKING STOCK, and the sums charged to capital on account of it.

VII.—ROLLING STOCK.

		ENGLAND.	SCOTLAND.	IRELAND.	UNITED KINGDOM.
Working Stock ...	{ Locomotives No.	10,928	1,508	558	12,994
	{ Coaching Stock... .. „	31,498	4,371	1,807	37,676
	{ Waggon do. „	282,079	74,046	10,726	366,851
Average Earnings per Engine £		4,621	4,427	4,904	4,611
Average Train-miles run per Engine ... No.		16,485	17,113	17,488	16,601

To take engines alone, during the past year the number has been increased, and the cost charged to capital—

494, or 4·73 per cent., on the English lines,
 40 „ 2·72 „ „ Scotch lines,
 21 „ 3·91 „ „ Irish lines,
 555 „ 4·46 „ „ United Kingdom,

and this at a time when gross traffic receipts (exclusive of miscellaneous items of revenue) increased 1·47 per cent. in England, 1·51 per cent. in Scotland, 3·94 per cent. in Ireland, and 1·58 per cent. in the United Kingdom.

The increase of the capital account for additional engines, therefore, was nearly 3½ times the corresponding increase of traffic on the English lines, and nearly double on the Scotch lines, the Irish lines, in this as in other respects, being on the safe side. The extent to which this has been carried during 1876 will be made more apparent by giving similar figures for the year 1875. During that year the number of engines were increased

455, or 4·56 per cent., on the English lines,
 38 „ 2·66 „ „ Scotch lines
 11 „ 2·09 „ „ Irish lines, and
 504 „ 4·22 „ „ United Kingdom,

with an increase of gross traffic receipts of 3·38 per cent. in England, 5·50 per cent. in Scotland, 4·40 per cent. in Ireland, and 3·66 per cent. in the United Kingdom.

The increase of traffic in this period, so far as the Scotch and Irish lines were concerned, was double the proportion of new engines, but the English lines exceeded in their debit to capital the proportion of extra traffic.

Taking the two years together, it seems anomalous that 504 new engines, or 4·22 per cent., were necessary to carry a traffic increased 3·66 per cent. in the United Kingdom in 1875; but it becomes incomprehensible how 555 more engines, or 4·46 per cent. additional, were required to carry a traffic increased by 1·58 per cent. only in the United Kingdom in the past year! The consequence is seen in the reduction of the average earnings per engine to the extent of £149 in England, £54 in Scotland, £131 in the United Kingdom,—the engines on the Irish lines earning the same amount as in the

previous year, that amount being nearly £300 more per engine than on the English lines, and nearly £500 more than the engines on the Scotch lines!

The immense sums set down in the companies' accounts half-year after half-year for new working stock is a matter requiring serious scrutiny; for it is self-evident that not only new engines, but new coaching and new waggon plant, are being purchased out of capital, rather than incur the expense of sufficiently repairing and renewing the old out of revenue, as should be done.

VIII.—TRAIN SERVICE, BLOCK SYSTEM, ACCIDENTS, &c.

		ENGLAND.	SCOTLAND.	IRELAND.	UNITED KINGDOM.
Train-miles {	Passenger Trains	No. 90,202,002	11,072,098	6,471,566	107,745,666
	Mchndse. & Mnrl. Trains	„ 89,944,821	14,734,240	3,287,012	107,966,073
	Total	„ 180,146,823	25,806,338	9,758,578	215,711,739
Prprtn. of Trn.-mils. per Ml. of Line {	Passenger Trains	„ 7,524	4,062	3,000	6,386
	Mchndse. & Mnrl. Trains	„ 7,502	5,405	1,524	6,399
	Total	„ 15,026	9,467	4,524	12,785
Average Interval between Trains* { * Say 330 days in the year— $\frac{1}{2}$ off for Sundays. }		Mins. 32	50	105	37
Prprtn. of Signals & Points interlocked		% 69	49	25	64
Prprtn. of Pass. Line on Block System		„ 69	52	2	57
Accidents.	No. of Train Accidents.	No. 124	20	6	150
	Pass. Killed } from causes beyond {	„ 35	...	1	36
	Do. Injured } their control {	„ 1,044	183	18	1,245
	Prprtn. of Accdnts. to No. of Trains	1 in 121	473	754	85
	Do. per million pssngs. carried	„ 3.88	2.00	2.89	3.59
	Prprtn. Klld. } per million of {	„ 14.31	...	17.35	14.95
	Do. Injured } passengers. {	„ 0.46	0.22	0.96	0.43
	Srvts. Killed } from causes beyond {	No. 22	5	1	28
	Do. Injured } their control {	„ 190	33	13	236

TRAIN-MILEAGE was increased during the past year as follows:—

On the ENGLISH LINES, with 1.55 per cent. of increased receipts from passenger trains, there was an increase of 4.79 per cent. of passenger train-mileage, or THREE times the equivalent of the increased earnings; with 1.41 per cent. of increased receipts from goods trains, there was an increase of goods train-mileage to the extent of 1.69 per cent., maintaining in this respect a closer connection between earnings and mileage than in passenger traffic; and with an increase of 1.45 per cent. of gross receipts, the gross train-mileage increased 3.21 per cent.

On the SCOTCH LINES, with 3.92 per cent. of increased receipts from passenger trains, there were 5.22 per cent. of additional passenger train miles; with a nominal increase of .07 per cent. of goods traffic receipts, the goods train-mileage was reduced 1.14 per cent.; and with 1.84 per cent. of additional gross receipts, the gross train-miles were increased 1.49 per cent.

On the IRISH LINES, with 1.02 per cent. of increased receipts from passenger trains, they had 4.25 per cent. of additional passenger train-miles, a wide difference here between the increase of miles and the money earned; with 7.39 per cent. of additional receipts from goods traffic, the goods train-mileage was reduced 2.19 per cent., indicating a considerable economy in running, but not sufficient to compensate for the free increase of passenger train-miles (passenger train-miles on the Irish lines being double the amount

of goods train-miles); and with 1·60 per cent. of increased gross receipts, the gross train-mileage was increased 1·99 per cent.

In the UNITED KINGDOM there is an increase of 1·74 per cent. of receipts from passenger trains, concurrent with an increase of passenger train-miles of 4·80 per cent.; an increase of receipts from goods traffic of 1·46 per cent., with an increase of goods train-miles of 1·17 per cent.; and an increase of gross receipts of 1·60 per cent., with an increase of gross train-miles run of 2·95 per cent. The mileage of goods trains seems to have been better—it may be more readily—kept in closer relation to the earnings than the passenger train-miles. On the English lines competition may have something to do with the liberal running of trains—the trains might be equally well filled, and the number of travellers did increase 6·63 per cent., but if producing less income, would give the same appearance of running miles in excess of the earnings.

The following SUMMARY gives, at a glance, the general results of the year:—

		ENGLAND.	SCOTLAND.	IRELAND.	UNITED KINGDOM.
I.					
Increase of—					
CAPITAL	%	3·37	2·98	1·38	3·22
Miles of Line	Miles.	200	5	9	214
Cost per Mile of Line	£	734	746	136	725
II.					
No. of Passengers	%	6·63	2·36	2·86	6·17
Receipts from Passenger Trains... ..	„	1·55	3·92	1·02	1·74
No. of Passengers per Mile of Line	No.	1856	312	190	1470
RECEIPTS from Passenger Trains do.	£	(dec.) 3	34	4	7
Receipts per Passenger Train-mile	d.	do. 1 $\frac{3}{4}$	(dec.) $\frac{1}{2}$	(dec.) 1 $\frac{3}{4}$	(dec.) 1 $\frac{3}{4}$
III.					
Tonnage	%	2·79	3·65	4·95	2·94
Receipts from Goods Traffic	„	1·41	·07	7·39	1·46
No. of Tons per Mile of Line	Tons.	155	354	71	197
RECEIPTS from Goods Trains do.	£	(dec.) 7	(dec.) 2	39	3
Receipts per Goods Train-mile	d.	—	$\frac{3}{4}$	8 $\frac{1}{2}$	$\frac{1}{4}$
IV.					
GROSS RECEIPTS from all Sources	%	1·45	1·84	3·86	1·60
GROSS TRAFFIC RECEIPTS per Mile of Line	£	(dec.) 10	32	43	10
Mean Traffic Receipts per Train-mile	d.	do. 1 $\frac{1}{2}$	—	1 $\frac{1}{4}$	(dec.) $\frac{3}{4}$
V.					
EXPENDITURE	%	·87	1·56	·93	·95
EXPENDITURE per Mile of Line	£	(dec.) 22	19	3	(dec.) 9
Expenditure per Train-mile	d.	do. ·90	·05	(dec.) ·40	do. ·75
VI.					
NET RECEIPTS	%	2·14	2·13	7·38	2·37
Net Receipts per Mile of Line	£	12	13	40	19
Net Receipts per Train-mile... ..	d.	(dec.) $\frac{1}{2}$	—	1 $\frac{3}{4}$	$\frac{1}{4}$

Without reiterating all that has been already said respecting the particular results involved in these figures, a few words more will finally dispose of the salient features. With 3·37 per cent. of additional capital, the English lines earned only 1·45 per cent. additional receipts from all sources, at an increased cost of ·87 per cent., and added to their net receipts 2·14 per cent., which, not being the equivalent of the additional capital, means a loss. The Scotch lines, allowing for the nominal increase, added to capital 2·98 per cent., earned 1·84 per cent. additional receipts, at an increased cost of 1·56 per cent., and added to their net receipts 2·13 per cent.—also less than the equivalent increase of capital. The Irish lines added 1·38 per cent. to capital, earned 3·86 per cent. more income, at an additional cost of ·93 per cent., and increased their net receipts by 7·38 per cent.—the only satisfactory result in the year's operations. To put the same thing in another light,—the English lines during the year represent £734 additional for every mile of line,

and for that they have a DECREASE in earning power of £10 for every mile, a decrease of expenditure of £22, and an increase of net receipts to the extent of £12 per mile of line; in other words, the increase of net receipts has been arrived at by saving revenue expenditure, not by earning power derived from the capital expended. The Scotch lines added £746 to the cost of every mile of line, earned £32 additional for every mile of line, expended £19 additional per mile, and had £13 per mile of line additional net receipts. The cost of the Irish lines per mile is increased by £136, with £43 per mile additional income, £3 additional expenditure per mile, and £40 per mile of enhanced net receipts. For every £61 added to capital on the English lines, and every £57 added to capital on the Scotch lines, they had £1 of additional net receipts per mile, while on the Irish lines a little over £3 earned £1 additional net receipts per mile!

Manuring the lines with capital, to borrow the expression of a railway magnate, is all very well, but if a worse instead of an improved result is arrived at, surely it must be acknowledged that there is something wrong either in the time or manner of doing it. If the additional outlay is not remunerative, there are strong reasons for questioning the processes pursued, and the sooner serious inquiry into the causes of failure are set on foot the better. On this point no more pertinent words were ever uttered to shareholders, if they would only adequately weigh and consider their deep import, than were addressed to them on a late occasion in the money article of *The Times*, to the following effect:—

“The excessive expenditure of railways on capital account may be fraught with serious consequences in the not distant future to the ordinary stockholder. . . . All the companies want rest from the lavish capital outlay in which they have indulged. Not only so, but we believe that before long a new system of treating the capital accounts will have to be put in use to prevent the mere outlays on the necessary improvements or changes which lines require from time to time imperilling dividends. Under the present system there can be practically no end to the growth of the capital account of our railways until traffic begins to dwindle away, which we hope will not be the case within a time which it would be reasonable to calculate upon. Every little addition to stock, every extra rail, a change from iron rails to steel, an extra waggon, any little improvement to stations and sidings, any change in signal apparatus, and much of the modern refittings necessary for greater safety of trains—all these we find set down to capital, and there can be no question that this plan is often a penny-wise, pound-foolish one, which will have to be materially altered before railway shares become really sound securities.”

Railway accounts are thrown together in that hazy, indefinite, and unbusinesslike form that no fundamental insight can be obtained into the financial details or the inner workings; nevertheless, such external results as can be drawn from them are sufficiently real and tangible as to tell very plainly and distinctly that deterioration has set in, and is leaving very decided impressions of its inroads into the railway system; and it is a question whether those mediately and immediately interested will allow the evil to go on unheeded and unchecked until it assumes more dire proportions.

The following comparison of the years 1876 and 1871 will convey to the mind, in a clear and tangible form, the extent of the deterioration going on:—

	Capital.	Length of Line.	No. of Passengers.	Tonnage.	Passenger Traffic Receipts.	Goods Traffic Receipts.	Gross Receipts from all Sources.	Net Receipts.
	£	Miles.			£	£	£	£
1876	658,214,776	16,872	538,287,295	205,965,064	26,163,551	33,754,317	62,215,775	28,680,266
1871	552,680,107	15,376	375,220,754	169,364,698	20,622,580	26,484,978	48,892,780	25,739,920
Incr.	105,534,669	1,496	163,066,541	36,600,366	5,540,971	7,269,339	13,322,995	2,940,346
Pro.	19.09%	9.73%	43.46%	21.61%	26.87%	27.44%	27.25%	11.42%

The Capital is increased by $105\frac{1}{2}$ millions, or fully 19 per cent., nearly double that of the extension of line, showing that the bulk of the money has been laid out on old lines. The number of passengers are double the proportion of increase of tonnage, but passenger traffic receipts have increased somewhat less than goods traffic. Again, against the 19.09 per cent. of additional capital there are $27\frac{1}{4}$ per cent. of increased gross receipts, which, at a first look, appears comparatively satisfactory,* but, coming to net receipts, it is found that they are only increased 11.42 per cent., the working expenditure between these two periods having increased from $47\frac{1}{3}$ per cent. to nearly 54 per cent. of the receipts; consequently, as 11.42 per cent. is to 19.09 per cent., to that extent has railway property depreciated! In 1871, the proportion of net receipts to capital was 4.65 per cent., and now, in 1876, after the outlay of probably 60 millions sterling, if not more, in additional equipment of old lines (allowing liberally, say £30,000 a mile, for the extensions, or 45 millions), the proportion of net receipts to capital has decreased to 4.36 per cent., or more than $\frac{1}{4}$ per cent. on the whole capital of the lines.

This is by no means reassuring. Nor is the position improved when tried in another way; for example:—

	Third Class Pas- sengers. No.		Receipts from Third Class Passengers. £		Receipts from Merchandise Traffic. £		Receipts from Mineral Traffic. £
1876	426,950,034	...	13,619,191	...	19,003,156	...	13,520,213
1871	258,556,615	...	8,119,157	...	15,418,171	...	10,029,253
Increase	168,393,419	...	5,500,034	...	3,584,985	...	3,490,960
Per Cent.	65		67.74		23.25		34.81

Receipts from first class passengers since 1871, compared with 1876 increased by nearly £420,000. Receipts from season ticket-holders increased by £435,000; but, against these, receipts from second-class passengers are less by nearly $1\frac{1}{2}$ million sterling.

The greatest relative increase of receipts ($67\frac{3}{4}$ per cent.) has been from third-class passengers—increase of receipts being slightly in excess of the increase of numbers; merchandise receipts increased $23\frac{1}{4}$ per cent., also slightly in excess of the relative tonnage moved; mineral receipts increased 34.81 per cent., while the increase of tonnage moved was about the same as merchandise (21 or 22 per cent.). This would appear to indicate the greatest relative improvement, for the work done, from mineral traffic; but, it is particularly worthy of observation, while the average receipt per train-mile for the third-class passenger was 1s. 9 $\frac{3}{4}$ d. in 1871, in 1876 it amounts to 2s. 6 $\frac{1}{4}$ d.—an improvement of 39 per cent. (meantime the receipts per train-mile from first and second-class passengers declined $26\frac{1}{4}$ per cent.); during the same period the receipts per train-mile from merchandise improved 1.80 per cent., from minerals 11 per cent., and the mean receipt per train-mile from both improved 5.47 per cent. As merchandise and mineral train-mileage are not given separately, it cannot by any means be concluded that the gain has been so much as it appears on the side of minerals as against

* It must not be forgotten, although it is partly hid by going back to 1871, that, as already stated, the increase of capital has been greater than the relative increase of gross receipts on the English lines since 1873; that is, since that year a greater amount of capital is expended to earn an equivalent amount of gross income. The same feature also appears on the Scotch lines in the past year. This is in addition to a high rate of working charges, consequently both these causes are operating to reduce net receipts or profits.

merchandise. There is every reason to believe that it is not so, for the great increase of long journey coal traffic to the Metropolis, since 1871, would increase the train-mileage as well as increase the tare, or empty back mileage, considerably. It would appear, indeed, that the third-class passenger is the backbone of the companies; but the competitive services—long trains of comparatively empty carriages for the special comfort and attraction of first-class through passengers (under the best arrangements there is much more tare in carrying first than third-class passengers)—are consuming the large profits made out of the popular traveller. Merchandise traffic is also known to be severely competed for, and it is probably only in cross or local traffic, or where there is no competition, that profit is made, and then made to an extent that bears heavily on traders in certain districts; of mineral traffic it is known that the rates for long journeys (not from railway competition only, but sea competition as well) are doubtfully remunerative; yet this apparently did not prevent the companies still further reducing mineral rates during 1876, for, compared with 1875, while the tonnage increased $4\frac{1}{2}$ per cent., the receipts increased by less than 1 per cent.

All this gives strong reason to believe that the great rise in working expenses from $47\frac{1}{3}$ to 54 per cent. of the receipts, between 1871 and 1876, is to be traced to these causes—competition in long journey passenger, merchandise, and mineral traffic; great tare in carrying first-class passengers, an enormous dead weight of back empty mileage in mineral traffic, and questionably remunerative rates, in many instances, for merchandise and for minerals. Mere increase of wages, shorter hours of labour, and advance in the price of materials—although the most have been made of them in official utterances—cannot be accepted as sufficient to account for the increased rate of expenditure. It conspicuously denotes that unprofitable work and unremunerative rates exist somewhere; and whether the profits that should accrue under sounder conditions, correspondingly to the enormous amount of capital expended, are being intercepted in this way; or, what is much the same thing, that the capital expenditure is simply another form of pledging the securities of the companies to maintain speculative and unproductive branches of business, it is of urgent consequence that the whole question of capital outlay should be thoroughly overhauled. This once done and put under vigilant surveillance, the revenue account—earnings, expenditure, profits, respectively, of each branch of the business—would soon correct itself, inasmuch as railway administration, having no ulterior resources freely to command, would then be on its merits. Administrators would then, of necessity, have to come down from the present ideal position and accept the real; study the principles and follow the practices that obtain in ordinary commercial life; show they were equal to it, and that they possessed the fertility of resource that commands success; fixing rates and fares, in their several transactions, on an equitable, business-like system, coincident to the actual cost of the work done. Thus, and no otherwise, will railway interests be consolidated on a firm foundation, and forth of such an administration will the whole trade and population of the country reap a fuller and more equal extension of the benefits of the railway system.

OUR LEADING LINES.

HAVING given a general outline of the results of railway working during the past year in the several countries, it is now a matter of equal, or even greater, consequence to see how far the somewhat unsatisfactory phases that have appeared affect the individual lines.

I.—CAPITAL, EXTENT OF LINE, &c.						
			LONDON & SOUTH WESTERN.	BRIGHTON.	CHATHAM & DOVER.	SOUTH EASTERN.
Capital	Ordinary	£	8,650,263	6,839,943	10,190,188	8,077,949
	Guaranteed	"	484,975	1,955,860	150,637	1,784,300
	Preferential	"	5,550,652	5,860,589	5,035,833	4,701,865
	Debenture Stock & Loans	"	5,388,485	4,813,510	6,240,207	4,916,890
	Total	"	20,074,375	19,469,902	21,616,865	19,481,004
	Less Subs. to other Cos. ...	"	879,697	...	...	71,000
	Lines Leased or Worked	"	19,194,678	...	...	19,410,004
		"	2,236,863	3,558,815	874,527	1,311,560
	Gross Total ...	"	21,431,541	23,028,717	22,491,392	20,721,564
Proportion of Capital, Parent Co.	Ordinary	%	43-09	35-13	47-14	41-47
	Guaranteed	"	2-42	10-05	0-70	9-16
	Preferential	"	27-65	30-10	23-30	24-13
	Debenture Stock & Loans	"	26-84	24-72	28-86	25-24
Length of Line	Double Line	Miles	442	260	135	318
	Single Line	"	245	89	24	13
	Total	"	687	349	159	331
	Proportion Single	%	35-66	25-50	15-10	3-93
Proportion of Gross Capital per Mile ...		£	31,196	65,985	141,455	62,603
CAPITAL, EXTENT OF LINE, &c.—continued.						
			METRO- POLITAN.	METRO- POLITAN DISTRICT.	GREAT EASTERN.	GREAT WESTERN.
Capital	Ordinary	£	4,158,370	2,220,380	10,942,973	14,957,211
	Guaranteed	"	...	244,444	5,485,023	19,623,190
	Preferential	"	1,601,630	1,500,000	4,186,705	10,064,204
	Debenture Stock & Loans	"	2,432,135	1,506,102	9,908,167	15,030,103
	Total	"	8,192,135	5,470,926	30,522,868	59,674,708
	Less Subs. to other Cos. ...	"	200,000	...	331,130	1,478,647
	Lines Leased or Worked	"	7,992,135	...	30,191,738	58,196,061
		"	812,062	...	5,237,460	18,168,784
	Gross Total ...	"	8,804,197	...	35,429,198	76,364,845
Proportion of Capital, Parent Co.	Ordinary	%	50-76	40-59	35-85	25-06
	Guaranteed	"	...	4-46	17-97	32-88
	Preferential	"	19-55	27-42	13-72	16-86
	Debenture Stock & Loans	"	29-69	27-53	32-46	25-20
Length of Line	Double Line	Miles	12	8	460	1,111
	Single Line	"	2	...	399	948
	Total	"	14	8	859	2,059
	Proportion Single	%	14-29	...	46-45	46-04
Proportion of Gross Capital per Mile ...		£	628,871	683,866	41,245	37,088

CAPITAL, EXTENT OF LINE, &c.—*continued.*

			GREAT NORTHERN.	LONDON & NORTH WESTERN.	MIDLAND.	MANCHESTER, SHEFFIELD & LINCOLN.
Capital	Ordinary	£	10,061,777	31,304,578	18,800,388	5,492,553
	Guaranteed ... ..	"	...	...	9,231,883	5,410,492
	Preferential	"	10,565,895	16,237,796	17,691,080	4,386,197
	Debenture Stock & Loans	"	6,706,453	21,243,764	13,683,636	5,797,513
	Total	"	27,334,125	68,786,138	59,406,987	21,086,755
	Less Subs. to other Cos. ...	"	3,019,889	3,614,800	4,679,812	4,754,835
	Lines Leased or Worked	"	24,314,236	65,171,338	54,727,175	16,331,920
		"	2,966,740	12,811,764	2,915,978	...
	Gross Total ...	"	27,280,976	77,983,102	57,643,153	...
Proportion of Capital, Parent Co.	Ordinary	%	36·81	45·51	31·65	26·05
	Guaranteed ... ..	"	...	...	15·54	25·66
	Preferential	"	38·65	23·61	29·78	20·80
	Debenture Stock & Loans	"	24·54	30·88	23·03	27·49
Length of Line	Double Line	Miles	472	1,262	928	234
	Single Line	"	168	370	310	26
	Total	"	640	1,632	1,238	260
	Proportion Single	%	26·25	22·67	25·04	10·00
Proportion of Gross Capital per Mile ...		£	42,626	47,784	46,561	62,815

CAPITAL, EXTENT OF LINE, &c.—*continued.*

			LANCA- SHIRE AND YORKSHIRE.	NORTH EASTERN.	CALE- DONIAN.	NORTH BRITISH.
Capital	Ordinary	£	14,116,594	19,583,294	11,337,725	6,281,601
	Guaranteed	"	7,425,181	8,342,965	6,847,270	...
	Preferential	"	...	13,438,128	6,535,717	13,796,409
	Debenture Stock & Loans	"	6,928,033	11,730,277	6,485,242	7,095,641
	Total	"	28,469,808	53,094,664	31,205,954	27,173,651
	Less Subs. to other Cos. ...	"	...	258,994	378,911	440,307
	Lines Leased or Worked	"	...	52,835,670	30,827,043	26,733,344
		"	963,277	149,535	2,421,666	1,135,768
	Gross Total ...	"	29,433,085	52,985,205	33,248,709	27,869,112
Proportion of Capital, Parent Co.	Ordinary	%	49·59	36·88	36·33	23·12
	Guaranteed	"	26·08	15·71	21·94	...
	Preferential	"	...	25·31	20·95	50·77
	Debenture Stock & Loans	"	24·33	22·10	20·78	26·11
Length of Line	Double Line	Miles	413	926	446	381
	Single Line	"	26	503	383	470
	Total	"	439	1,429	829	851
	Proportion Single	%	5·92	35·20	46·20	55·23
Proportion of Gross Capital per Mile ...		£	67,046	37,078	40,107	32,748

CAPITAL, EXTENT OF LINE, &c.—*continued.*

			GLASGOW & SOUTH WESTERN.	GT. SOUTH & WEST. OF IRELAND.	MID. GT. WEST. OF IRELAND.	GREAT NORTH. OF IRELAND.
Capital	Ordinary	£	4,777,710	4,654,632	2,368,300	2,892,359
	Guaranteed	"	819,360	...	...	220,000
	Preferential	"	1,242,822	1,329,100	400,000	499,575
	Debenture Stock & Loans	"	2,203,201	873,965	1,326,902	1,294,367
	Total	"	9,043,093	6,857,697	4,095,202	4,906,301
	Less Subs. to other Cos.	"	510,000	18,000	113,350	77,579
	Lines Leased or Worked	"	8,533,093 212,000	6,839,697 204,434	3,981,852 1,442,603	4,828,722 1,163,057
Gross Total ...		"	8,745,093	7,044,131	5,424,455	5,991,779
Proportion of Capital, Parent Co.	Ordinary	%	52·83	67·88	57·83	58·95
	Guaranteed	"	9·06	...	...	4·49
	Preferential	"	13·74	19·38	9·77	10·18
	Debenture Stock & Loans	"	24·37	12·74	32·40	26·38
Length of Line	Double Line	Miles	216	195	116	136
	Single Line	"	101	290	299	322
	Total	"	317	485	415	458
	Proportion Single	%	31·86	59·80	72·05	70·30
Proportion of Gross Capital per Mile ...		£	27,587	14,524	13,071	13,082

There is a more general INCREASE OF CAPITAL than of LENGTH OF ADDITIONAL LINE. Of the latter, except the increase of 460 miles of the Great Western by absorption of smaller lines, and the extension of the Midland system, the only other lines that have added any thing noticeable are the London and North Western, 28 miles; North Eastern, 23 miles; Great Northern, 14 miles; and a few others of 2 or 3 or 4 miles.

The greater extent of the Great Western system has added 15·28 per cent. to the parent, and 26·92 per cent. to the gross capital involved; the next greatest increase has been on the Great Northern, amounting to 8·92 per cent. on the parent, and 7·54 per cent. on the gross capital; the Midland is increased 7·71 per cent. on its parent, and 5·86 per cent. on the gross capital; the North Eastern is increased 4·45 per cent. on parent, and 4·61 per cent. on gross capital; the North British, allowing for the nominal increase, is more by 4·18 per cent. on parent, and 3·02 per cent. on gross capital; the Lancashire and Yorkshire is increased 3·97 per cent. on parent, and 3·84 per cent. on gross capital; the London and North Western is increased 2·94 per cent. on parent, and 2·21 per cent. on gross capital; the Manchester, Sheffield and Lincolnshire is increased 2·73 per cent. on parent capital; the Glasgow and South Western increased 2·74 per cent. on parent, and 2·83 per cent. on gross capital; the South Eastern 2·03 per cent. on parent, and 1·90 per cent. on gross capital; the Caledonian, allowing for the nominal increase, 1·78 per cent. on parent, and 1·71 per cent. on gross capital; Metropolitan, 1·72 per cent. on parent, and ·31 per cent. on gross capital; the Brighton, 1·49 per cent. on parent, and 1·84 per cent. on gross capital; London and South Western, 1·21 per cent. on parent, and ·45 per cent. on gross capital; the

Great Eastern, '22 per cent. on parent, and '65 per cent. on gross capital; the Chatham and Dover, '21 per cent. on parent, and '33 per cent. on gross capital; while the Metropolitan District is shown as being less.

It is noticeable that the greatest relative increase of capital is on the Northern, mineral carrying lines, and the least on the Great Eastern, the Southern, and the Metropolitan lines.

THE INCREASE OF GROSS CAPITAL PER MILE OF LINE is relatively heaviest on the Great Northern, amounting to the sum of £2,103, or 5·19 per cent. per mile; £2,771, or 4·31 per cent. on the Lancashire and Yorkshire; £879, or 3·02 per cent. on the North British; £1,055, or 2·93 per cent. on the North Eastern; £590, or 2·18 per cent. on the Glasgow and South Western; £1,168, or 1·90 per cent. on the South Eastern; £1,037, or 1·68 per cent. on the Manchester, Sheffield and Lincolnshire; £449, or 1·35 per cent. on the Caledonian. The others are all under one per cent. of increase or have an actual decrease per mile of line.

How far this expenditure has been warranted by increase of traffic will be learned from the details that follow.

It may be noted that THE PROPORTION OF ORDINARY STOCK TO PARENT CAPITAL of the several companies tends to decrease, amounting to 3·53 per cent. on the Great Northern, 2·44 per cent. on the Midland, 1·96 per cent. on the Lancashire and Yorkshire, 1·45 per cent. on the Glasgow and South Western, 1·65 per cent. on the Great Western, 1·33 per cent. on the London and North Western, and to a less extent on some of the other lines; but there is an increase of the proportion of ordinary stock of 7·15 per cent. on the North British, 4·07 per cent. on the Caledonian, and 1 per cent. on the Metropolitan.

NUMBER OF PASSENGERS AND RECEIPTS FROM PASSENGER TRAINS.—Numbers, as a rule, are increased much beyond the additional income derived; but there are some exceptions to which attention will be drawn. To take the Metropolitan and Southern lines first,—the Metropolitan with over 7 millions, or 16·20 per cent., more passengers, derived from passenger trains £27,976, or 6 per cent., of increased receipts; the Brighton had over 3½ millions, or 13·82 per cent., more passengers, and derived only £5,634, or '44 per cent., of increased receipts from passenger trains; the Chatham and Dover carried over 1½ million, or 7·66 per cent., more passengers, and earned from passenger trains £13,611, or 2·04 per cent., increased receipts; the Metropolitan District also carried over 1½ million, or 6·03 per cent., more passengers, and earned £15,159, or 5·82 per cent., additional receipts from passenger trains; the London and South Western carried nearly 1½ million, or 6·82 per cent., more passengers, and earned from passenger trains £51,199, or 3·39 per cent., additional receipts; and the South Eastern carried 167,274, or '71 per cent., more passengers, and earned £15,333 LESS income from passenger trains. These results are so variable as to merit a little attention. Thus the Metropolitan, with 16·20 per cent. increase of numbers, earns 6 per cent. of additional receipts, and the Metropolitan District, with 6·03 per cent. increase of numbers, earns 5·82 per cent. additional receipts, or nearly as much as the Metropolitan, showing that the average length of journeys varied but little on the District line, while the shorter journey traffic increased on the other. Passing over the decreased receipts of the South Eastern, the extreme of increase of short journeys is reached on the Brighton, the increase of numbers

LANCA- SHIRE AND YORKSHIRE	NORTH EASTERN.	CALE- DONIAN.	NORTH BRITISH.	GLASGOW & SOUTH WESTERN.	GT. SOUTH. & WEST. OF IRELAND.	MID. GT. WEST. OF IRELAND.	GREAT NORTH. OF IRELAND.
2,393,783 2,874,116 31,522,567	1,261,842 1,972,767 26,219,611	1,559,760 1,399,852 11,223,514	1,698,732 1,104,271 11,624,449	667,476 519,144 4,771,402	266,753 397,448 1,632,981	109,352 102,369 826,374	291,818 567,087 2,635,532
36,790,466 6,883	29,454,220 15,533	14,183,126 5,205	14,427,452 14,030	5,958,022 1,437	2,297,182 443	1,038,095 160	3,494,437 1,594
177,537 138,232 101,422 86,748	220,515 163,413 1,086,856 57,113	176,148 96,897 495,551 41,988	166,667 80,438 479,165 40,152	66,241 34,069 213,139 16,009	82,045 86,955 139,367 1,422	39,562 26,439 122,025 869	65,734 66,410 140,252 4,507
1,303,939 110,497 8,248	1,527,897 198,680 44,966	810,584 91,870 54,638	766,422 85,637 16,075	329,458 29,117 11,368	309,789 31,926 32,422	188,895 18,344 17,395	276,903 19,774 35,732
1,422,684	1,771,543	957,092	868,134	369,943	374,137	224,634	332,409
5,453 6,547 71,805	883 1,881 18,348	1,881 1,689 13,539	1,996 1,298 13,659	2,105 1,633 15,052	550 819 3,367	263 247 1,991	637 1,238 5,754
83,805 16	20,612 11	17,109 6	16,953 16	18,795 5	4,736 1	2,501 ...	7,629 3
404 315 2,053 198	154 114 761 40	212 117 598 51	196 94 563 47	209 108 672 50	169 179 288 3	95 64 294 2	144 145 306 10
2,970 252 19	1,069 139 32	978 111 66	900 101 19	1,039 92 36	639 65 67	455 44 42	605 43 78
3,241	1,240	1,155	1,020	1,167	771	541	726
0 7½ 0 5¼ 3 2 0 3¾	0 6¾ 0 5 2 9¾ 0 1¾	0 9¾ 0 5¼ 2 3½ 0 2¼	0 10½ 0 5 2 6½ 0 2½	0 9½ 0 5 2 7 0 2¼	1 0¾ 1 1¾ 1 10 0 0¾	0 9¼ 0 6¼ 2 5 0 0¼	0 10¾ 0 11 1 11¼ 0 0¾
4 7 0 4½ 0 0¼	3 11¼ 0 6¼ 0 1½	3 8¾ 0 5 0 3	4 0½ 0 5½ 0 1	3 11¾ 0 4¼ 0 1½	4 0¾ 0 5 0 5	3 8¾ 0 4¼ 0 4	3 9¾ 0 3½ 0 6
4 11¾	4 7	4 4¾	4 7	4 5½	4 10¾	4 5	4 7
6·51 7·81 85·68	4·28 6·70 89·02	11·00 9·87 79·13	11·78 7·65 80·57	11·20 8·72 80·08	11·61 17·30 71·09	10·54 9·86 79·60	8·35 16·23 75·42
13·62 10·60 69·13 6·65	14·43 10·70 71·13 3·74	21·73 11·95 61·14 5·18	21·74 10·50 62·52 5·24	20·11 10·34 64·69 4·86	26·48 28·07 44·99 0·46	20·94 14·00 64·60 0·46	23·74 23·98 50·65 1·63

II.—PASSENGER TRAFFIC.

			LONDON & SOUTH WESTERN.	BRIGHTON.	CHATHAM AND DOVER.	SOUTH EASTERN.	METRO-POLITAN.	METRO-POLITAN DISTRICT.	GREAT EASTERN.	GREAT WESTERN.	GREAT NORTHERN.	LONDON & NORTH WESTERN.	MIDLAND.	MANCHESTER, SHEFFIELD & LINCOLN.	LANCA-SHIRE AND YORKSHIRE.	NORTH EASTERN.	CALE- DONIAN.	NORTH BRITISH.	GLASGOW & SOUTH WESTERN.	GT. SOUTH & WEST, OF IRELAND.	MID. GT. WEST, OF IRELAND.	GREAT NORTH, OF IRELAND.
Number of Passengers	First Class	No.	2,869,340	2,307,316	2,138,629	2,106,058	5,676,192	3,062,417	2,424,803	2,634,583	1,152,649	3,269,550	2,723,568	455,090	2,393,783	1,261,842	1,559,760	1,698,732	667,476	266,753	109,352	291,818
	Second „	„	4,632,891	3,081,994	2,439,713	2,624,854	9,485,005	4,873,113	4,278,840	8,066,217	2,764,944	5,933,247	...	713,976	2,874,116	1,972,767	1,399,852	1,104,271	519,144	337,418	102,369	567,087
	Third „	„	14,927,672	23,533,796	17,626,364	18,901,224	35,517,407	19,479,653	30,847,930	31,559,447	14,231,674	37,543,535	25,992,652	9,950,050	31,522,567	26,219,611	11,223,514	11,624,449	4,771,402	1,632,981	826,374	2,635,532
	Total	„	22,430,103	28,923,106	22,214,706	23,632,136	50,678,604	27,415,183	37,551,573	42,280,247	18,149,267	46,746,332	28,716,220	11,119,116	36,790,466	29,454,220	14,183,126	14,427,452	5,958,022	2,297,182	1,088,095	3,491,437
	Season Tickets	„	40,638	12,818	58,101	9,439	10,809	7,978	8,330	19,334	25,653	24,927	9,835	1,428	6,883	15,533	5,205	14,030	1,437	443	160	1,594
Receipts from Passenger Trains	First Class	£	326,960	282,247	157,146	323,651	84,312	51,933	201,972	478,427	221,220	686,400	399,770	41,265	177,537	220,515	176,148	166,667	66,241	82,045	39,562	65,734
	Second „	„	336,169	240,218	90,931	197,769	110,666	54,923	166,670	695,676	192,632	541,182	...	38,237	138,232	163,413	96,897	80,438	34,069	86,955	26,439	66,410
	Third „	„	632,166	551,474	334,082	584,750	269,863	153,490	761,632	1,501,388	624,923	1,842,724	1,245,442	278,715	1,014,222	1,086,856	495,551	479,165	213,139	139,367	122,025	140,252
	Season Tickets	„	106,992	129,543	62,965	127,526	28,741	15,166	72,888	66,413	50,448	98,052	65,432	13,700	86,748	57,113	41,988	40,152	16,009	1,422	869	4,507
	Total	„	1,402,287	1,203,482	645,124	1,233,696	493,582	275,512	1,203,162	2,741,904	1,089,223	3,168,358	1,710,644	371,917	1,303,939	1,527,897	810,584	766,422	329,458	309,789	188,895	276,903
Average No. of Passengers per Mile of line	Excess Luggage, Parcels, &c. ...	„	137,260	80,330	36,172	98,719	916	...	98,740	344,837	151,177	433,865	229,927	70,392	110,497	198,680	91,870	85,637	29,117	31,926	18,344	19,774
	Mails	„	22,291	6,252	427	27,035	...	...	26,139	95,136	17,587	147,140	48,348	2,702	8,243	44,966	54,638	16,075	11,368	32,422	17,395	35,732
	Gross	„	1,561,838	1,290,064	681,723	1,359,450	494,498	...	1,328,041	3,181,877	1,257,987	3,749,363	1,988,919	445,011	1,422,684	1,771,543	957,092	868,134	369,943	371,137	221,631	332,409
Average Receipts from Passenger Trains per Mile of line	First Class	No.	4,177	6,611	13,450	6,363	405,442	382,802	2,823	1,289	1,801	2,003	2,200	1,750	5,453	883	1,881	1,996	2,105	550	263	637
	Second „	„	6,743	8,831	15,344	7,930	677,500	609,139	4,981	3,917	4,320	3,633	...	2,746	6,547	1,381	1,689	1,298	1,638	819	247	1,238
	Third „	„	21,729	67,432	110,921	57,103	2,536,958	2,434,957	35,911	15,328	22,237	29,005	20,996	38,270	71,805	18,348	13,539	13,659	15,052	3,367	1,991	5,754
	Total	„	32,649	82,874	139,715	71,396	3,619,900	3,426,898	43,715	20,534	28,358	28,643	23,196	42,766	83,805	20,612	17,109	16,953	18,795	4,736	2,501	7,629
	Season Tickets	„	59	37	365	29	772	997	10	9	40	15	8	5	16	11	6	16	5	1	...	3
Average Receipts from Passenger Trains per Mile of line	First Class	£	476	809	988	978	6,022	6,492	235	232	346	420	323	159	404	154	212	196	269	169	95	144
	Second „	„	489	688	572	597	7,905	6,865	194	338	301	332	...	147	315	114	117	94	108	179	64	145
	Third „	„	920	1,580	2,101	1,767	19,276	19,186	886	729	976	1,129	1,006	1,072	2,053	761	598	563	672	288	294	306
	Season Tickets	„	156	371	396	385	2,053	1,896	85	32	79	60	53	53	198	40	51	47	50	3	2	10
	Total	„	2,041	3,448	4,057	3,727	35,256	34,439	1,400	1,331	1,702	1,941	1,382	1,431	2,970	1,069	978	900	1,039	639	455	605
Average Receipts from Passenger Trains per Mile of line	Excess Luggage, Parcels, &c. ...	„	200	230	227	298	65	...	115	168	236	266	186	271	252	139	111	101	92	65	44	43
	Mails	„	32	18	3	82	...	...	31	46	27	90	39	10	19	32	66	19	36	67	42	78
	Gross	„	2,273	3,696	4,287	4,107	35,321	34,439	1,546	1,545	1,965	2,297	1,607	1,712	3,241	1,240	1,155	1,020	1,167	771	541	726
Average Receipts per Train mile	First Class	s. d.	1 1	1 1½	1 3	1 8½	1 11½	1 3½	0 8½	0 9½	0 9½	0 10½	0 10½	0 5½	0 7½	0 6½	0 9½	0 10½	0 9½	1 0½	0 9½	0 10½
	Second „	„	1 1½	0 11½	0 8½	1 0½	2 7	1 4	0 7	1 1½	0 8½	0 8½	...	0 5	0 5½	0 5	0 5	0 5	0 5	1 1½	0 6½	0 11
	Third „	„	2 1	2 2½	2 7	3 0½	4 3½	3 9½	2 8½	2 5½	2 2½	2 4½	2 9½	3 0	3 2	2 9½	2 3½	2 6½	2 7	1 10	2 5	1 11½
	Season Tickets	„	0 4½	0 6	0 6	0 8	0 8	0 4½	0 3	0 1½	0 2	0 1½	0 1½	0 1½	0 3½	0 1½	0 2½	0 2½	0 2½	0 0½	0 0½	0 0½
	Total	„	4 7½	4 9	5 1	6 5½	11 5½	6 9	4 2½	4 6½	3 10	4 0½	3 10½	4 0	4 7	3 11½	3 8½	4 0½	3 11½	4 0½	3 8½	3 9½
Proportion of Classes	Excess Luggage, Parcels, &c. ...	„	0 5½	0 3½	0 3½	0 6½	0 0½	...	0 4½	0 6½	0 6½	0 6½	0 6½	0 9	0 4½	0 6½	0 5	0 5½	0 4½	0 5	0 4½	0 3½
	Mails	„	0 0½	0 0½	...	0 1½	...	...	0 1	0 1½	0 0½	0 2½	0 1½	0 0½	0 0½	0 1½	0 3	0 1	0 1½	0 5	0 4	0 6
	Gross	„	5 1½	5 1	5 4½	7 1½	11 6	6 9	4 8	5 2½	4 5½	4 9½	4 5½	4 9½	4 11½	4 7	4 4½	4 7	4 5½	4 10½	4 5	4 7
Proportion of Receipts	First Class	%	12.79	7.98	9.63	8.91	11.20	11.17	6.46	6.28	6.35	7.00	9.48	4.09	6.51	4.28	11.00	11.78	11.20	26.48	20.94	23.74
	Second „	„	20.65	10.66	10.98	11.11	18.72	17.77	11.39	19.08	15.24	12.69	...	6.42	7.81	6.70	9.87	7.65	8.72	17.30	9.86	16.23
	Third „	„	66.56	81.36	79.39	79.98	70.08	71.06	82.15	74.64	78.41	80.31	90.52	89.49	85.68	89.02	79.13	80.57	80.08	71.09	79.60	75.42
	Season Tickets	„	7.63	10.77	9.76	10.34	5.83	5.50	6.06	2.42	4.63	3.10	3.82	3.68	6.65	3.74	5.18	5.24	4.86	0.46	0.46	1.63
	Total	„	23.32	23.45	24.36	26.23	17.08	18.85	16.79	17.45	20.31	21.66	23.37	11.10	13.62	14.43	21.73	21.74	20.11	26.48	20.94	23.74

being nearly 14 per cent., and the increase of receipts less than a half per cent.

The Great Eastern carried nearly 3 millions, or 8·62 per cent., more passengers, and earned from passenger trains £33,545, or 2·59 per cent., additional receipts; the Great Western, from the great additional length of line, carried over 6½ millions, or 17·36 per cent., more passengers, and earned 25·85 per cent. of additional receipts from passenger trains. The average passenger journey, therefore, on the Great Western appears to have increased considerably.

Of the Northern lines, the ratio of increased numbers is greatest on the Manchester, Sheffield, and Lincolnshire, being $\frac{3}{4}$ million, or 7·19 per cent., but the increased receipts from passenger trains amount to £5,991, or 1·37 per cent., only. The Lancashire and Yorkshire carried over 2 millions, or 5·86 per cent., more passengers, and earned £4,214 LESS from passenger trains; the London and North Western carried nearly 2 millions, or 4·28 per cent., more passengers, and earned £13,289, or ·35 per cent., additional from passenger trains; the Midland carried close upon a million, or 3·43 per cent., more passengers, and earned £160,680, or 8·79 per cent., additional receipts from passenger trains—it had, of course a considerably increased line upon the previous year; the Great Northern carried nearly half a million, or 2·65 per cent., more passengers, and earned from passenger trains £7,911, or ·63 per cent., additional receipts; and the North Eastern carried a slightly decreased number of passengers, and derived £37,160 LESS from passenger trains. These lines seem, therefore, to be increasing in very short journey traffic, except the Midland, which exceeds in its proportion of receipts the increase of numbers, and hence must be improving on the long journeys.

Of the Scotch lines, the Glasgow and South Western carried nearly ¼ million, or 4·20 per cent., more passengers, and earned £45,094, or 13·88 per cent., additional receipts from passenger trains; the North British, with an increase of 1·72 per cent. in numbers, derived £28,192, or 3·36 per cent., additional receipts from passenger trains; and the Caledonian, with an increase of 3 per cent. in numbers, had an increase of £7,980, or ·84 per cent., of additional receipts from passenger trains.

Taking a general survey of these results as applicable to the competing through routes, one feature in particular stands out very prominently, and that is, that the Midland policy and the opening of the Settle and Carlisle line has had a very marked effect on all the other companies.

The London and North Western and Caledonian represent the West Coast route,—and the former, with an increase of numbers of 4·28 per cent., had only ·35 per cent. increased passenger train receipts; the latter had 3·04 per cent. increased numbers and ·84 per cent. increased receipts. Both companies improved on short journeys only.

The Great Northern and North Eastern represent the East Coast route. While the former had 2·65 per cent. increase of numbers, it had but ·63 per cent. of increased receipts from passenger trains; the latter had an actual decrease of 161,453 passengers, and £37,160 less receipts from passenger trains, principally from a falling away of first and second-class passengers.

The North British holds that dual position of being a continuation alike of the East Coast route and (by the Waverley line) of the Midland route.

It increased its numbers by 1·72 per cent. and its receipts from passenger trains by 3·36 per cent., showing a clear increase on the long journeys, and which, as they cannot reasonably be credited to its East Coast neighbours, must be put down to the Midland connection.

The immediate ally of the Midland is the Glasgow and South Western ; and the Midland, with 3·43 per cent. increase of numbers, had 8·79 per cent. increased receipts from passenger trains, and the Glasgow and South Western, still more pronounced, with 4·20 per cent. increase of numbers, had 13·88 per cent. of increased receipts from passenger trains !

The policy of the Midland would also appear in some degree to have affected its neighbours, the Manchester, Sheffield and Lincolnshire and Lancashire and Yorkshire, for such increases as they have are in short journey traffic, with the further drawback, in the case of the latter, of an actual decrease in receipts.

That the bold and original policy of the Midland is a popular as well as a paying one—to itself and its allies at least—seems proved beyond doubt. These results show clearly that it is now extensively patronised as the leading through route between England and Scotland, to the detriment of the East and West Coast lines. To those who have watched the development of the Midland system, with all the difficulties and impediments that it had so long to contend against at Rugby, at Hitchin, and elsewhere, before it had a free and untrammelled outlet ; or to those who have become interested in “The Midland Railway : its Rise and Progress,”* from Mr. Williams’ interesting book bearing this title, it will afford a meed of satisfaction and pleasure to know that energy and enterprise have their victory at last.

RECEIPTS FROM PASSENGER TRAINS PER MILE OF LINE.—Of the Southern lines, the London and South Western earned £68, or 3·08 per cent., additional, and the Chatham £32, or 0·75 per cent., additional, while the South Eastern and Brighton respectively earned £47 and £27 LESS per mile. The Metropolitan, also, had £565 LESS per mile, but the District line had £1,895, or 5·82 per cent., more. The Great Eastern earned £32, or 2·11 per cent., more, but the Great Western had £36 LESS per mile. Of the Northern and Scotch lines, the Great Northern had £32, the North Eastern £47, and the London and North Western £32 LESS per mile ; the Midland had an increase of £2, the Manchester, Sheffield and Lincolnshire £24, or 1·42 per cent., the Lancashire and Yorkshire £5, and the Caledonian £6, but the North British had an increase of £33, or 3·34 per cent., and the Glasgow and South Western £136, or 13·19 per cent., additional.

The remarks already made regarding the competing routes are borne out again by these figures. The North British and Glasgow and South Western are materially improved beyond all the others ; and, while the other trunk lines are down, it is hopeful for the Midland that it improved its average ever so little over the extent of its system, with its additional mileage of new line and consequently, as yet, undeveloped local strength.

AVERAGE RECEIPTS PER PASSENGER TRAIN MILE.—These are almost generally reduced, the only exceptions being the Metropolitan with 6d. and the District with 11½d. per train-mile additional. The Southern lines are all

lower than the previous year—the Brighton $3\frac{3}{4}$ d., London and South Western and Chatham each $1\frac{1}{2}$ d., and the South Eastern 1d. The Great Eastern is $\frac{3}{4}$ d. and the Great Western $1\frac{1}{2}$ d. less. The largest reduction of the year is on the Great Northern, of 4d. per train-mile; the North Eastern also is 3d. less, the Caledonian $2\frac{1}{2}$ d., Midland $2\frac{1}{4}$ d., London and North Western $1\frac{1}{4}$ d., Lancashire and Yorkshire $1\frac{1}{2}$ d., and the Manchester, Sheffield and Lincolnshire, North British, and Glasgow and South Western, $\frac{1}{4}$ d. each.

THE PROPORTION OF PASSENGER RECEIPTS are generally increased on all the lines from third class passengers and decreased from second class—the exceptions being a slight advance on second class on the Chatham, the Metropolitan lines advanced in first and second class, the Great Western in seconds, a slight increase from second class on the Lancashire and Yorkshire, and the Glasgow and South Western derived an increased proportion of receipts from first class passengers. The highest proportion of receipts from third class passengers is on the Manchester, Sheffield and Lincolnshire line, amounting to nearly 75 per cent. of the whole passenger receipts; the next is the Midland, deriving nearly 73 per cent. from the same source; following it is the North Eastern, with over 71 per cent. The Great Eastern derives a larger proportion ($63\frac{1}{2}$ per cent.) of passenger receipts from third class than the Great Western, Great Northern, or London and North Western; and the lowest proportion of receipts (45 per cent.) from third class is found on the London and South Western.

III.—GOODS TRAFFIC.

			LONDON & SOUTH WESTERN.	BRIGHTON.	CHATHAM & DOVER.	SOUTH EASTERN.
Tons Carried	Merchandise	Tons	1,268,929	744,478	496,425	838,260
	Minerals	"	1,135,967	1,063,183	924,251	554,525
	Total	"	2,404,896	1,807,661	1,420,676	1,392,785
Receipts from Goods Traffic	Merchandise	£	565,580	293,925	113,997	299,773
	Minerals	"	173,630	134,570	84,215	79,314
	Live Stock... ..	"	33,153	10,532	6,297	12,433
	Total	"	772,363	439,027	204,419	391,520
Average No. of Tons per Mile of Line	Merchandise	Tons	1,847	2,133	3,122	2,533
	Minerals	"	1,654	3,047	5,813	1,675
	Total	"	3,501	5,180	8,935	4,208
Average Receipts per Mile of Line	Merchandise	£	823	842	717	906
	Minerals	"	253	386	530	239
	Live Stock... ..	"	48	30	39	38
	Total	"	1,124	1,258	1,286	1,183
Average Receipts per Train-mile	Merchandise	s. d.	4 6 $\frac{1}{4}$	5 7 $\frac{1}{2}$	4 2 $\frac{1}{4}$	6 3 $\frac{3}{4}$
	Minerals	"	1 4 $\frac{1}{2}$	2 6 $\frac{3}{4}$	3 1	1 8
	Live Stock... ..	"	0 3 $\frac{1}{4}$	0 2 $\frac{1}{2}$	0 2 $\frac{3}{4}$	0 3
	Total	"	6 2	8 4 $\frac{3}{4}$	7 6	8 2 $\frac{3}{4}$

GOODS TRAFFIC—*continued.*

			METRO- POLITAN.		GREAT EASTERN.	GREAT WESTERN.
Tons Carried.	Merchandise	Tons	333,650	... ..	1,831,849	4,672,200
	Minerals	"	894,240	... ..	2,763,287	14,211,822
	Total	"	1,227,899	... ..	4,595,136	18,884,022
Receipts from Goods Traffic	Merchandise	£	13,427	... ..	893,883	1,871,299
	Minerals	"	11,744	... ..	284,401	1,740,076
	Live Stock	"	253	... ..	103,585	106,528
	Total	"	25,424	... ..	1,281,869	3,717,903
Average No. of Tons per Mile of Line	Merchandise	Tons	23,832	... ..	2,132	2,269
	Minerals	"	63,875	... ..	3,217	6,902
	Total	"	87,707	... ..	5,349	9,171
Average Receipts per Mile of Line	Merchandise	£	959	... ..	1,041	909
	Minerals	"	839	... ..	331	845
	Live Stock... ..	"	18	... ..	120	52
	Total	"	1,816	... ..	1,492	1,806
Average Receipts per Train- mile	Merchandise	s. d.	0 3 $\frac{3}{4}$	... ..	4 10	2 9 $\frac{1}{2}$
	Minerals	"	0 3 $\frac{1}{4}$	... ..	1 6 $\frac{1}{4}$	2 7
	Live Stock... ..	"	—	... ..	0 6 $\frac{3}{4}$	0 1 $\frac{1}{2}$
	Total	"	0 7	... ..	6 11	5 6 $\frac{1}{4}$

GOODS TRAFFIC—*continued.*

			GREAT NORTHERN.	LONDON & NORTH WESTERN.	MIDLAND.	MANCHESTER SHEFFIELD & LINCOLN.
Tons Carried	Merchandise	Tons	3,465,519	—	9,151,112	4,010,523
	Minerals	"	2,696,781	—	11,203,034	4,186,577
	Total	"	6,162,300	26,931,795	20,354,146	8,197,100
Receipts from Goods Traffic	Merchandise	£	1,097,716	3,223,261	2,529,849	701,112
	Minerals	"	544,427	2,016,492	1,585,430	338,836
	Live Stock... ..	"	52,972	211,453	75,341	19,575
	Total	"	1,695,115	5,451,206	4,190,620	1,059,523
Average No. of Tons per Mile of Line	Merchandise	Tons	5,415	—	7,392	15,425
	Minerals	"	4,214	—	9,049	16,102
	Total	"	9,629	16,502	16,441	31,527
Average Receipts per Mile of Line	Merchandise	£	1,715	1,975	2,043	2,697
	Minerals	"	851	1,235	1,281	1,303
	Live Stock... ..	"	83	130	61	75
	Total	"	2,649	3,340	3,385	4,975
Average Receipts per Train- mile	Merchandise	s. d.	3 8	3 9 $\frac{1}{2}$	3 5	4 3 $\frac{1}{2}$
	Minerals	"	1 10	2 4 $\frac{1}{2}$	2 1 $\frac{1}{2}$	2 1
	Live Stock... ..	"	0 2	0 3	0 1 $\frac{1}{4}$	0 1 $\frac{1}{2}$
	Total	"	5 8	6 5	5 8	6 6

GOODS TRAFFIC—continued.

			LANCA- SHIRE AND YORKSHIRE	NORTH EASTERN	CALE- DONIAN.	NORTH BRITISH.
Tons Carried	Merchandise	Tons	4,285,738	7,897,397	2,634,636	2,518,722
	Minerals	"	8,367,341	26,446,298	10,108,534	7,369,848
	Total	"	12,653,079	34,343,695	12,743,170	9,888,570
Receipts from Goods Traffic	Merchandise	£	1,402,914	2,075,356	808,318	696,483
	Minerals	"	664,784	2,385,336	964,680	601,271
	Live Stock... ..	"	47,550	96,445	68,099	50,953
	Total	"	2,115,248	4,557,137	1,841,097	1,348,707
Average No. of Tons per Mile of Line	Merchandise	Tons	9,762	5,526	3,178	2,960
	Minerals	"	19,660	18,507	12,194	8,660
	Total	"	28,822	24,033	15,372	11,620
Average Receipts per Mile of Line	Merchandise	£	3,196	1,452	975	819
	Minerals	"	1,514	1,669	1,164	706
	Live Stock... ..	"	108	68	82	60
	Total	"	4,818	3,189	2,221	1,585
Average Receipts per Train- mile	Merchandise	s. d.	4 11 $\frac{3}{4}$	2 11 $\frac{3}{4}$	2 5 $\frac{3}{4}$	3 0
	Minerals	"	2 4 $\frac{1}{4}$	3 5 $\frac{1}{4}$	2 11 $\frac{1}{2}$	2 7 $\frac{1}{4}$
	Live Stock... ..	"	0 2	0 1 $\frac{3}{4}$	0 2 $\frac{1}{2}$	0 2 $\frac{3}{4}$
	Total	"	7 6	6 6 $\frac{3}{4}$	5 7 $\frac{3}{4}$	5 10

GOODS TRAFFIC—continued.

			GLASGOW & SOUTH WESTERN.	GT. SOUTH. & WEST. OF IRELAND.	MID. GT. WEST. OF IRELAND.	GT. NORTH OF IRELAND.
Tons Carted	Merchandise	Tons	745,603	620,638	345,653	813,961
	Minerals	"	3,797,112	87,179	24,198	...
	Total	"	4,542,715	707,817	369,851	813,961
Receipts from Goods Traffic	Merchandise	£	283,861	282,550	186,579	253,749
	Minerals	"	309,668	17,492	5,456	...
	Live Stock... ..	"	17,750	68,352	69,704	30,450
	Total	"	611,279	368,394	261,739	284,199
Average No. of Tons per Mile of Line	Merchandise	Tons	2,352	1,279	833	1,777
	Minerals	"	11,978	180	58	...
	Total	"	14,330	1,459	891	1,777
Average Receipts per Mile of Line	Merchandise	£	895	583	450	554
	Minerals	"	977	36	13	...
	Live Stock... ..	"	56	141	168	66
	Total	"	1,928	760	631	620
Average Receipts per Train- Mile	Merchandise	s. d.	2 4 $\frac{3}{4}$	5 10 $\frac{1}{2}$	5 11 $\frac{1}{4}$	7 4 $\frac{1}{2}$
	Minerals	"	2 7 $\frac{1}{4}$	0 4 $\frac{1}{2}$	0 2	...
	Live Stock... ..	"	0 1 $\frac{3}{4}$	1 5	2 2 $\frac{3}{4}$	0 10 $\frac{1}{2}$
	Total	"	5 1 $\frac{3}{4}$	7 8	8 4	8 3

The weight of merchandise and mineral traffic is increased during the past year by 182,704 tons, or 8·22 per cent., on the London and South Western, and the receipts are increased £55,712, or 7·77 per cent. This is the greatest relative improvement that has taken place on any of the leading lines, except the Great Western, but it is accounted for by the increased length of line. The Brighton line carried 120,787 more tons, or 7·16 per cent., and earned £24,097, or 5·80 per cent., additional receipts—a considerable improvement also. The South Eastern carried 89,298 tons, or 6·85 per cent., additional; but derived £26,351 LESS—the result of shorter journeys or a cheaper class of traffic evidently; and the Chatham carried less weight and earned £4,825 less receipts. The Metropolitan carried 55,971 tons less, and earned 1·60 per cent. of additional receipts.

Looking a little closer into this matter, it will be found that the London and South Western and Brighton increased their merchandise traffic to a greater extent than the mineral, hence the ratio of increased receipts is well up, in each case, to the ratio of additional weight carried. The Chatham fell off in the weight of mineral traffic, but the decreased receipts are almost wholly from merchandise traffic. The latter remark applies with greater force to the South Eastern. The Metropolitan, with a considerably decreased mineral tonnage, had a slight increase of merchandise, and thereby had a small gain in receipts.

The Great Eastern increased its weight of traffic by 139,717 tons, or 3·13 per cent., and earned £19,560, or 1·55 per cent., additional receipts; the Great Western carried nearly 2½ millions additional tons, or 15·23 per cent., and earned £577,810, or 18·40 per cent., of additional receipts. While the ratio of increased receipts to increased weight is only half in the former case, in the latter the advantage is on the side of receipts. The Great Eastern carried rather over 800,000 tons less merchandise, and fully 940,000 tons more minerals, earned £16,742 additional from merchandise, and only £2,917 additional from mineral traffic. These results are so striking that the desire is excited to pursue the inquiry further; but the way is stopped for want of the all-important factor, the ton-mileage. Whether, therefore, merchandise rates were increased, whether merchandise was carried longer average distances, or whether the merchandise was of a higher class; and likewise of the minerals, whether they were carried shorter distances, or at reduced rates—the companies' reports and the Board of Trade returns give no means of discovering. The indispensable materials for a satisfactory and conclusive investigation are not forthcoming. The Great Western increased its merchandise traffic by 635,447 tons, and mineral traffic by 1,860,377 tons, or nearly three times more in the latter than the former, yet the increased receipts from merchandise were £319,103, and from minerals only £248,434, —every ton of merchandise additional representing nearly four times the earning power of the additional mineral traffic. The Great Western also had an increase of £10,273 from live stock traffic.

Of the Northern lines, the Great Northern carried an increased weight of 94,545 tons, or 1·55 per cent., and earned £19,827, or 1·18 per cent., additional receipts. The London and North Western carried 414,419 tons, or 1·56 per cent., more, and earned £41,431, or ·76 per cent., of increased receipts. The Midland carried 198,336 tons, or ·98 per cent., more, and earned £82,818, or 2·01 per cent., additional receipts. The Manchester, Sheffield and Lincolnshire carried nearly half-a-million tons less, and earned £56,906 less receipts. The Lancashire and Yorkshire carried 693,314 tons,

or 5·80 per cent., more, and earned £20,914, or 1 per cent., additional; and the North Eastern carried 2,179 fewer tons, and lessened the receipts £88,598. To analyse these results somewhat closer, also, it is found that the Great Northern carried 144,769 tons more of merchandise and 50,224 tons less of minerals, earned £25,196 additional from the former and £9,038 less from the latter, with £3,669 additional from live stock. The London and North Western Company elect to be singular in not giving the tonnage of merchandise and mineral traffic separately, and the officers of the Board of Trade are pleased to humour their crotchet. This company earned the nominal amount of £4,773 additional from merchandise traffic, and had £39,276 additional from mineral traffic, with £2,618 less from live stock traffic. Two-fifths of a million of tons additional carried, represented by £44,000 additional receipts, is a result that is remarkable by its disproportion. The Midland carried 503,274 tons additional merchandise and 304,938 tons less of minerals, earned £152,141 additional from the former and £78,406 less from the latter, with £9,083 additional from live stock traffic. The Manchester, Sheffield and Lincolnshire carried 20,804 tons less of merchandise and 454,122 tons less of minerals, lost by the former £13,088 and by the latter £45,289, but had £1,471 additional from live stock traffic. In this instance, every ton of merchandise lost represents a sum of about 12s. 7d., but every ton of minerals represents less than a sixth of this sum, or 2s. Mineral traffic seems to be wooed by these companies for the pure luxury of crowding their lines with trains. The Lancashire and Yorkshire carried 181,371 tons additional of merchandise and 511,943 tons additional of minerals, earned £11,058 less from the former and £29,699 more from the latter, and £2,273 additional also from live stock traffic. This appears a very extraordinary result. If rates for merchandise have not been reduced, or if the merchandise has not been of a lower class, the average distance it was carried must have been very much less; while the additional weight of minerals carried and the additional earnings from them represent less than 1s. 2d. a ton. The deputy-chairman of this company lately spoke of mineral traffic as being the least remunerative—an admission that it has not been the habit to hear from such a quarter; but merchandise traffic seems shrinking also, as well as passenger traffic, on this line. The North Eastern had a lean year. With 45,410 fewer tons of merchandise, and 43,261 tons additional of minerals, it lost only £23,636 on the former and £66,971 on the latter, and had £2,009 more from live stock traffic.

Of the Scotch lines, the Caledonian carried 71,378 tons more merchandise and 293,203 tons more minerals, earned £17,766 less from the former and £3,244 more from the latter. The receipts also from live stock were reduced £2,381. The North British carried 276,451 tons of merchandise and 190,183 tons of minerals additional, and lost £8,192 on the former and £7,983 on the latter traffic, but had £878 additional from live stock traffic. The Glasgow and South Western carried 50,058 tons more merchandise and 19,799 fewer tons of minerals, earned £31,275 additional from the former and £1,228 less from the latter, and had £2,915 additional from live stock traffic.

The want of the ton-mileage is such a serious defect in the railway returns that the extraordinary and variable results exhibited in these figures can have no really valuable light thrown upon them, and conjecture, however feasible, is always a doubtful resort. Through the haze just a gleam of light may be obtained.

That mineral traffic, particularly on the competing lines, is not only ques-

tionably remunerative, but, when all the elements of capital outlay and cost of working are brought into the account, it is extremely doubtful if a positive loss is not entailed. This matter has been so clearly and vigorously dealt with elsewhere, however, that it becomes unnecessary to say anything further regarding it except that appearances are all against it, and in favour of the views of the able writer alluded to.* But merchandise traffic on most of the lines appears to be falling off in relative income as well. The smaller increase of merchandise receipts to increased weight on the Great Northern indicates, apparently, shorter journeys, the same on the London and North Western, Manchester, Sheffield and Lincolnshire, and Lancashire and Yorkshire, as well as on the North Eastern, Caledonian, and astonishingly so on the North British. Shorter journeys would probably be too pleasant a view to take of the relative loss of earning power. It is more to be feared that competitive rates to woo traffic have been resorted to, to bring about the almost universal and unsatisfactory results. Meanwhile, the Midland and Glasgow and South Western are again exceptional—the one, with rather less than 1 per cent. increase of tonnage, has two per cent. of increased receipts, and the other, with .67 per cent. of increased tonnage, has 5.70 per cent. increased receipts. It is clear that the Midland and its ally are not only absorbing a preponderating share of the long journey passenger traffic, but of the higher class merchandise traffic and cattle traffic to boot!

RECEIPTS FROM GOODS TRAINS PER MILE OF LINE present a general decrease, the exceptions being the London and South Western with £78, the Brighton with £55, Great Eastern with £16, the Lancashire and Yorkshire with £69, and the Glasgow and South Western with the highest figure, £92, additional.

THE AVERAGE RECEIPTS PER GOODS TRAIN-MILE

are increased 6 $\frac{3}{4}$ d. on the Brighton Line,
 2 $\frac{3}{4}$ d. on the Great Eastern,
 $\frac{3}{4}$ d. on the Great Northern,
 $\frac{3}{4}$ d. on the Midland,
 $\frac{1}{4}$ d. on the Manchester, Sheffield and Lincolnshire,
 2 $\frac{3}{4}$ d. on the Lancashire and Yorkshire,
 $\frac{1}{4}$ d. on the North Eastern,
 $\frac{3}{4}$ d. on the North British,
 4 $\frac{3}{4}$ d. on the Glasgow and South Western;
 and reduced 1 $\frac{1}{2}$ d. on the London and South Western,
 3s. 1 $\frac{1}{4}$ d. on the Chatham and Dover,
 1s. 3d. on the South Eastern,
 1d. on the Great Western,
 $\frac{1}{4}$ d. on the Caledonian.

The extent of unprofitable mileage of the South Eastern is eclipsed only by the Chatham!

The train-mile test is a rude enough one at best, but, as applied to goods traffic, it is rendered nugatory by merchandise and mineral train mileage being huddled together as if they were in any sense, which they are not, representative of a kindred traffic. All that can be made out from it is that the mineral-carrying lines have the least receipts per goods train-mile; and this leads to the impression that the mixing together of merchandise and mineral mileage is another veil thrown over the mineral question.

* "Railway Profits and Railway Losses."—*Edinburgh Review*, April, 1876, and April, 1877.
 "The Money Cost of the Mineral Traffic on Railways." By F. R. Conder, C.E.—*Fraser's Magazine*, July, 1877. (See also *Fraser*, September, 1877, and January, 1878.)

IV.—GROSS RECEIPTS.

			LONDON & SOUTH WESTERN.	BRIGHTON.	CHATHAM AND DOVER.	SOUTH EASTERN.
Passenger and Goods Traffic		£	2,334,201	1,729,091	886,142	1,750,970
Miscel., Rents, Tolls, Navigation, &c....		,,	281,969	76,289	134,148	165,787
Total		,,	2,616,170	1,805,380	1,020,290	1,916,757
Gross Traffic Receipts per Mile of Line		,,	3,397	4,954	5,573	5,290
Mean of Traffic Receipts per Train-mile		s. d.	5 5½	5 7½	5 9	7 4
Proportion of Gross Receipts	Passengers... ..	%	53·60	66·66	63·23	64·36
	Parcels, &c.	,,	5·25	4·45	3·55	5·15
	Mails	,,	0·85	0·35	0·04	1·41
	Passenger Traffic ...	,,	59·70	71·46	66·82	70·92
	Merchandise	,,	21·62	16·28	11·17	15·64
	Minerals	,,	6·64	7·45	8·25	4·14
	Live Stock... ..	,,	1·26	0·58	0·61	0·65
	Goods Traffic	,,	29·52	24·31	20·03	20·43
Miscellaneous		,,	10·78	4·23	13·15	8·65

GROSS RECEIPTS—continued.

			METRO- POLITAN.	METRO- POLITAN DISTRICT.	GREAT EASTERN.	GREAT WESTERN.
Passenger and Goods Traffic		£	519,922	275,512	2,609,910	6,899,780
Miscel., Rents, Tolls, Navigation, &c....		,,	35,966	9,092	204,215	132,541
Total		,,	555,888	284,604	2,814,125	7,032,321
Gross Traffic Receipts per Mile of Line		,,	37,137	34,439	3,038	3,351
Mean of Traffic Receipts per Train-mile		s. d.	12 1	6 9	5 6½	5 4½
Proportion of Gross Receipts	Passengers... ..	%	88·79	96·80	42·75	33·99
	Parcels, &c.	,,	0·17	...	3·51	4·90
	Mails ... ..	,,	...	...	0·93	1·35
	Passenger Traffic ...	,,	88·96	96·80	47·19	45·24
	Merchandise	,,	2·42	...	31·76	26·61
	Minerals	,,	2·11	...	10·11	24·74
	Live Stock... ..	,,	0·04	...	3·68	1·52
	Goods Traffic	,,	4·57	...	45·55	52·87
Miscellaneous		,,	6·47	3·20	7·26	1·89

GROSS RECEIPTS—*continued.*

			GREAT NORTHERN.	LONDON & NORTH WESTERN.	MIDLAND.	MANCHESTER SHEFFIELD & LINCOLN.
Passenger and Goods Traffic		£	2,953,102	9,200,569	6,179,539	1,504,534
Miscel., Rents, Tolls, Navigation, &c. ...		„	52,795	120,408	65,679	235,325
Total		„	3,005,897	9,320,977	6,245,218	1,739,859
Gross Traffic Receipts per Mile of Line		„	4,614	5,637	4,992	5,787
Mean of Traffic Receipts per Train-mile		s. d.	5 0 $\frac{3}{4}$	5 7 $\frac{3}{4}$	5 2 $\frac{3}{4}$	5 10 $\frac{1}{2}$
Proportion of Gross Receipts	Passengers... ..	%	36·24	33·99	27·39	21·38
	Parcels, &c.	„	5·03	4·66	3·68	4·05
	Mails	„	0·58	1·58	0·77	0·15
	Passenger Traffic ...	„	41·85	40·23	31·84	25·58
	Merchandise	„	36·52	34·58	40·51	40·30
	Minerals	„	18·11	21·63	25·39	19·48
	Live Stock... ..	„	1·76	2·27	1·21	1·12
	Goods Traffic	„	56·39	58·48	67·11	60·90
	Miscellaneous	„	1·76	1·29	1·05	13·52

GROSS RECEIPTS—*continued.*

			LANCA- SHIRE AND YORKSHIRE.	NORTH EASTERN.	CALE- DONIAN.	NORTH BRITISH.
Passenger and Goods Traffic		£	3,537,932	6,328,680	2,798,189	2,216,841
Miscel., Rents, Tolls, Navigation, &c. ...		„	30,268	161,074	138,398	46,050
Total		„	3,568,200	6,489,754	2,936,587	2,262,891
Gross Traffic Receipts per Mile of Line		„	8,059	4,429	3,376	2,605
Mean of Traffic Receipts per Train-mile		s. d.	6 3	5 10 $\frac{1}{4}$	5 1 $\frac{3}{4}$	5 3 $\frac{1}{4}$
Proportion of Gross Receipts	Passengers	%	36·54	23·54	27·60	33·87
	Parcels, &c.	„	3·10	3·06	3·13	3·78
	Mails	„	0·23	0·70	1·86	0·71
	Passenger Traffic ...	„	39·87	27·30	32·59	38·36
	Merchandise	„	39·32	31·98	27·53	30·78
	Minerals	„	18·63	36·75	32·85	26·57
	Live Stock... ..	„	1·33	1·49	2·32	2·25
	Goods Traffic	„	59·28	70·22	62·70	59·60
Miscellaneous		„	0·85	2·48	4·71	2·04

GROSS RECEIPTS—*continued*.

			GLASGOW AND SOUTH WESTERN.	GT. SOUTH & WEST. OF IRELAND.	MID. GT. WEST. OF IRELAND.	GREAT NORTH. OF IRELAND.
Passenger and Goods Traffic... ..		£	981,222	742,531	486,373	616,608
Miscel., Rents, Tolls, Navigation, &c. ...		„	25,287	2,253	11,456	4,236
Total		„	1,006,509	744,784	497,829	620,844
Gross Traffic Receipts per Mile of Line		„	3,095	1,531	1,172	1,346
Mean of Traffic Receipts per Train-mile		s. d.	4 10½	5 11¾	5 11	5 9
Proportion of Gross Receipts	Passengers... ..	%	32·73	41·59	37·94	44·60
	Parcels, &c.	„	2·89	4·29	3·69	3·19
	Mails	„	1·13	4·35	3·49	5·76
	Passenger Traffic ...	„	36·75	50·23	45·12	53·55
	Merchandise	„	28·20	37·94	37·48	40·87
	Minerals	„	30·77	2·35	1·10	...
	Live Stock... ..	„	1·77	9·18	14·00	4·90
	Goods Traffic	„	60·74	49·47	52·58	45·77
Miscellaneous		„	2·51	0·30	2·30	0·68

GROSS RECEIPTS, including miscellaneous income, are increased on the following lines :—

Great Western	£1,281,154, or 22·28 per cent.
Glasgow and South Western...	78,760 „ 8·49 „
Metropolitan	29,236 „ 5·55 „
London and South Western ...	124,271 „ 4·99 „
Metropolitan District...	11,683 „ 4·28 „
Midland	249,596 „ 4·16 „
Brighton	27,268 „ 1·53 „
Great Eastern... ..	39,149 „ 1·41 „
Great Northern	33,755 „ 1·13 „
North British	17,210 „ 0·77 „
London and North Western ...	54,895 „ 0·59 „
Lancashire and Yorkshire ...	8,546 „ 0·24 „
Chatham and Dover	2,040 „ 0·20 „

and the following are reduced below the previous year :—

North Eastern	£118,007
Manchester, Sheffield and Lincolnshire	43,878
South Eastern	28,681
Caledonian	14,498

Taking MISCELLANEOUS REVENUE separately, the following Companies have an increase :—

London and South Western	£17,360
---------------------------------	---------

South Eastern	...	...	...	...	...	£13,003
Metropolitan ...	...	...	...	...	...	859
Great Western	...	...	...	...	...	49,772
Great Northern	...	...	...	...	...	6,017
London and North Western...	...	...	...	...	...	175
Midland	...	...	...	...	...	6,098
Manchester, Sheffield and Lincolnshire	...	...	...	...	...	7,037
North Eastern	...	...	...	...	...	7,751
North British	...	...	...	...	...	4,315

and the following are reduced :—

Brighton	...	...	...	...	...	£2,463
Chatham	...	...	...	...	...	6,746
Metropolitan District	...	...	...	...	...	3,476
Great Eastern	...	...	...	...	...	13,956
Lancashire and Yorkshire	...	...	...	...	...	8,154
Caledonian	...	...	...	...	...	5,576

As already stated, however, these miscellaneous receipts are so thrown into the official returns that no information can be got as to whether they represent a loss or a gain on canal and steamboat traffic, a point that it is very essential should be made clear.

GROSS TRAFFIC RECEIPTS PER MILE OF LINE are generally decreased, the following being the exceptions :—

Glasgow and South Western...	£228, or 7.95 per cent., additional.
Metropolitan District	1,895 „ 5.82 „ „
London and South Western	146 „ 4.49 „ „
Great Eastern	48 „ 1.60 „ „
Lancashire and Yorkshire	74 „ 0.93 „ „
North British	15 „ 0.58 „ „
Brighton	28 „ 0.57 „ „

MEAN TRAIN-MILE RECEIPTS are increased on the

Metropolitan District	...	...	...	...	11½d.
Metropolitan	...	...	...	...	6d.
Glasgow and South Western	...	...	...	...	2¾d.
Lancashire and Yorkshire	...	...	...	...	½d.
Great Eastern	...	...	...	...	¼d.

All the others are reduced :—

Chatham and Dover	...	...	...	...	5¾d.
South Eastern	...	...	...	...	3½d.
Brighton	...	...	...	...	2¼d.
Great Northern...	...	...	...	...	1¾d.
London and South Western	...	...	...	...	1½d.
London and North Western	...	...	...	...	1¼d.
North Eastern	...	...	...	...	1¼d.
Caledonian	...	...	...	...	1¼d.
Midland...	...	...	...	...	½d.
Manchester, Sheffield and Lincolnshire	...	...	...	...	¼d.

the North British remaining the same as the previous year.

PROPORTION OF GROSS RECEIPTS.—It is a feature worth drawing attention to, that of what may be called the mineral-carrying lines, those of them

V.—WORKING EXPENDITURE.

			LONDON & SOUTH WESTERN.	BRIGHTON.	CHATHAM AND DOVER.	SOUTH EASTERN.	METRO-POLITAN.	METRO-POLITAN DISTRICT.	GREAT EASTERN.	GREAT WESTERN.	GREAT NORTHERN.	LONDON & NORTH WESTERN.	MIDLAND.	MANCHESTER, SHEFFIELD & LINCOLN.	LANCA-SHIRE AND YORKSHIRE.	NORTH EASTERN.	CALE- DONIAN.	NORTH BRITISH.	GLASGOW & SOUTH WESTERN.	GT. SOUTH & WEST OF IRELAND.	MID. GT. WEST. OF IRELAND.	GREAT NORTH. OF IRELAND.
Gross Working Expenditure	Maintenance of Way, &c.	£	252,371	121,479	78,864	122,418	24,181	13,506	269,649	920,348	306,287	1,011,033	651,113	120,076	285,531	739,883	283,498	277,984	148,408	127,083	85,097	92,401
	Locomotive Power	"	309,283	244,475	139,859	214,137	45,501	37,139	380,755	863,654	418,445	1,223,255	908,865	163,386	509,656	1,088,640	375,003	285,590	132,440	100,086	59,170	89,691
	Repairs, Carriages, and Waggons	"	91,288	61,820	31,977	63,381	10,298	6,480	117,886	266,203	110,042	322,491	243,293	70,345	221,480	466,245	137,515	120,232	67,604	32,155	22,110	23,789
	Traffic Charges	"	443,933	243,488	157,460	220,715	61,520	34,266	468,658	986,347	548,346	1,660,594	1,142,737	273,267	732,736	886,985	414,444	339,012	139,960	89,367	64,854	73,252
	General Charges	"	50,063	37,418	24,008	67,542	25,310	12,337	51,038	124,255	81,467	183,352	110,392	40,166	65,828	101,507	53,376	42,887	21,334	9,006	13,320	15,339
	Rates and Taxes	"	58,031	55,747	28,518	68,817	20,189	6,719	50,443	129,462	63,725	161,763	124,750	29,238	82,055	135,110	62,695	35,207	16,150	23,849	10,097	12,384
	Government Duty	"	44,655	42,622	22,901	45,801	12,666	7,921	44,941	111,467	34,251	140,757	44,113	6,520	37,528	38,247	19,420	21,239	7,624	×	×	×
	Compensation—Passengers	"	4,557	3,728	9,830	3,417	7,340	9,534	6,950	27,000	65,296	62,222	17,313	10,303	33,343	15,775	13,142	6,095	4,512	382	3,406	961
	Do, Goods	"	10,663	8,712	3,696	9,336	30	...	6,990	44,155	19,130	77,629	51,850	8,814	20,507	18,678	7,142	13,225	2,858	2,773	2,614	2,779
	Legal & Parliamentary Expenses	"	6,610	9,320	6,677	10,498	3,313	1,368	17,527	25,063	11,309	60,263	15,760	9,394	17,449	12,500	6,931	13,032	3,446	1,169	2,713	5,023
Total	Steamboat, Canal, &c.	"	172,289	22,111	59,407	50,427	...	...	134,363	128,207	8,856	118,194	2,479	140,219	6,928	49,505	38,831	42,879	7,757	...	4,389	...
	Miscellaneous	"	24,383	15,455	15,056	15,340	6,889	4,064	...	82,042	6,916	110,197	31,058	33,884	5,708	...	44,518	23,671	5,912	9,001	...	4,467
Total		"	1,468,126	866,375	578,253	891,829	217,237	133,334	1,546,904	3,708,203	1,674,070	5,131,730	3,343,728	910,612	2,018,749	3,553,075	1,456,518	1,221,053	558,005	395,471	267,770	320,086
Expenditure per Mile of Line		"	1,886	2,419	3,263	2,542	15,517	16,666	1,644	1,739	2,602	3,072	2,699	2,963	4,583	2,452	1,710	1,384	1,736	815	635	699
Expenditure per Train-mile	Way, Works, &c.	d.	7.07	4.76	6.15	6.15	6.75	3.97	6.88	8.63	6.31	7.42	6.60	5.63	6.04	8.22	6.27	7.93	8.85	12.27	12.44	10.36
	Locomotive Power	"	8.66	9.58	10.90	10.75	12.69	10.93	9.72	8.10	8.62	9.01	9.22	7.90	16.78	12.10	8.29	8.14	7.90	9.66	8.65	10.05
	Repairs, Carriages, and Waggons	"	2.56	2.42	2.49	3.18	2.87	1.91	3.01	2.49	2.27	2.37	2.47	3.30	4.68	5.19	3.04	3.43	4.03	3.10	3.23	2.67
	Traffic Charges	"	12.43	9.54	12.27	11.08	17.14	10.08	11.96	9.25	11.30	12.23	11.60	12.82	15.50	9.86	9.17	9.67	8.35	8.62	9.49	8.21
	General Charges	"	1.40	1.47	1.87	3.39	7.06	3.63	1.32	1.16	1.63	1.35	1.12	1.88	1.39	1.13	1.18	1.22	1.27	0.93	1.95	1.72
	Rates and Taxes	"	1.62	2.18	2.22	3.45	5.63	1.98	1.27	1.21	1.31	1.19	1.27	1.37	1.74	1.50	1.33	1.00	0.96	2.30	1.48	1.39
	Government Duty	"	1.25	1.67	1.79	2.30	3.54	2.45	1.15	1.04	0.70	1.03	0.45	0.30	0.79	0.43	0.43	0.61	0.45	×	×	×
	Compensation—Passengers	"	0.13	0.15	0.77	0.17	2.05	2.81	0.12	0.25	0.14	0.45	0.17	0.48	0.71	0.18	0.29	0.17	0.27	0.04	0.50	0.11
	Do, Goods	"	0.30	0.34	0.29	0.47	0.01	...	0.18	0.42	0.40	0.57	0.53	0.42	0.43	0.20	0.16	0.38	0.17	0.27	0.38	0.31
	Legal & Parliamentary Expenses	"	0.19	0.37	0.52	0.53	0.92	0.40	0.45	0.24	0.23	0.44	0.16	0.44	0.37	0.14	0.15	0.37	0.21	0.11	0.39	0.56
Total		"	36.29	33.09	40.44	42.24	60.58	39.23	36.06	33.56	34.30	36.93	33.90	36.13	42.55	38.95	31.34	33.60	32.81	35.17	38.51	35.88
Proportion of Expenditure to Gross Receipts from Trains	Way, Works, &c.	%	10.81	7.02	8.90	6.99	4.65	4.90	10.33	13.34	10.37	10.99	10.53	7.98	8.07	11.69	10.13	12.54	15.13	17.11	17.50	14.98
	Locomotive Power	"	13.25	14.14	15.78	12.23	8.75	13.48	14.59	12.52	14.17	13.29	14.71	11.19	14.41	17.20	13.40	12.88	13.50	13.48	12.16	14.55
	Repairs, Carriages, and Waggons	"	3.91	3.58	3.61	3.62	1.98	2.35	4.52	3.86	3.73	3.50	3.94	4.68	6.26	7.37	4.92	5.42	6.89	4.33	4.54	3.86
	Traffic Charges	"	19.02	14.06	17.77	12.60	11.83	12.44	17.96	14.29	18.57	18.05	18.49	18.16	20.71	14.02	14.81	15.29	14.26	12.04	13.33	11.88
	General Charges	"	2.14	2.17	2.71	3.86	4.87	4.48	1.95	1.80	2.76	2.00	1.79	2.67	1.86	1.60	1.91	1.93	2.17	1.29	2.74	2.49
	Rates and Taxes	"	2.49	3.22	3.22	3.93	3.88	2.44	1.93	1.88	2.16	1.76	2.02	1.94	2.32	2.13	2.24	1.59	1.65	3.21	2.08	2.01
	Government Duty	"	1.91	2.47	2.58	2.62	2.44	2.88	1.72	1.61	1.16	1.53	0.71	0.43	1.06	0.60	0.69	0.78	×	×	×	×
	Compensation—Passengers	"	0.20	0.21	1.11	0.20	1.41	3.46	0.18	0.39	2.21	0.68	0.28	0.69	0.94	0.25	0.47	0.28	0.46	0.05	0.70	0.16
	Do, Goods	"	0.46	0.50	0.42	0.53	0.01	...	0.27	0.64	0.65	0.84	0.84	0.59	0.58	0.30	0.29	0.38	0.29	0.54	0.45	0.45
	Legal & Parliamentary Expenses	"	0.28	0.54	0.75	0.60	0.64	0.50	0.67	0.36	0.38	0.65	0.26	0.62	0.49	0.20	0.25	0.59	0.35	0.16	0.56	0.81
Total		"	55.51	48.82	58.55	48.05	41.78	48.40	54.12	51.88	56.39	54.49	54.07	51.20	56.86	55.36	50.66	53.15	56.08	53.26	54.15	51.91
Propn. of Expend. to Gross Receipts from all sources		"	56.12	47.99	56.67	46.53	39.08	46.85	54.97	52.73	55.69	55.06	53.54	52.34	56.57	54.75	49.59	53.96	55.44	53.10	53.79	51.56

LANCA- SHIRE AND YORKSHIRE	NORTH EASTERN.	CALE- DONIAN.	NORTH BRITISH.	GLASGOW & SOUTH WESTERN.	GT. SOUTH & WEST OF IRELAND.	MID. GT. WEST. OF IRELAND.	GREAT NORTH. OF IRELAND.
285,531	739,883	283,498	277,984	148,408	127,083	85,097	92,401
503,656	1,088,640	375,003	285,590	132,440	100,086	59,170	89,691
221,480	466,245	137,515	120,232	67,604	32,155	22,110	23,789
732,736	886,985	414,444	339,012	139,960	89,367	64,854	73,252
65,828	101,507	53,376	42,887	21,334	9,606	13,320	15,339
82,055	135,110	62,695	35,207	16,150	23,849	10,097	12,384
37,528	38,247	19,420	21,239	7,624	×	×	×
33,343	15,775	13,142	6,095	4,512	382	3,406	961
20,507	18,678	7,142	13,225	2,858	2,773	2,614	2,779
17,449	12,500	6,934	13,032	3,446	1,169	2,713	5,023
6,928	49,505	38,831	42,879	7,757	...	4,389	...
5,708	...	44,518	23,671	5,912	9,001	...	4,467
2,018,749	3,553,075	1,456,518	1,221,053	558,005	395,471	267,770	320,086
4,583	2,452	1,710	1,384	1,736	815	635	699
6-04	8-22	6-27	7-93	8-85	12-27	12-44	10-36
10-78	12-10	8-29	8-14	7-90	9-66	8-65	10-05
4-68	5-19	3-04	3-43	4-03	3-10	3-23	2-67
15-50	9-86	9-17	9-67	8-35	8-62	9-49	8-21
1-39	1-13	1-18	1-22	1-27	0-93	1-95	1-72
1-74	1-50	1-33	1-00	0-96	2-30	1-43	1-39
0-79	0-43	0-43	0-61	0-45	×	×	×
0-71	0-18	0-29	0-17	0-27	0-04	0-50	0-11
0-43	0-20	0-16	0-38	0-17	0-27	0-38	0-31
0-37	0-14	0-15	0-37	0-21	0-11	0-39	0-56
0-12	...	0-98	0-68	0-35	0-87	...	0-50
42-55	38-95	31-34	33-60	32-81	35-17	38-51	35-88
8-07	11-69	10-13	12-54	15-13	17-11	17-50	14-98
14-41	17-20	13-40	12-88	13-50	13-48	12-16	14-55
6-26	7-37	4-92	5-42	6-89	4-33	4-54	3-86
20-71	14-02	14-81	15-29	14-26	12-04	13-33	11-88
1-86	1-60	1-91	1-93	2-17	1-29	2-74	2-49
2-32	2-13	2-24	1-59	1-65	3-21	2-08	2-01
1-06	0-60	0-69	0-96	0-78	×	×	×
0-94	0-25	0-47	0-28	0-46	0-05	0-70	0-16
0-58	0-30	0-25	0-60	0-29	0-38	0-54	0-45
0-49	0-20	0-25	0-59	0-35	0-16	0-56	0-81
0-16	...	1-59	1-07	0-60	1-21	...	0-72
56-86	55-36	50-66	53-15	56-08	53-26	54-15	51-91
56-57	54-75	49-59	53-96	55-44	53-10	53-79	51-56

that have drawn an increased proportion of their receipts from passenger or merchandise traffic, and lessened the proportion from mineral traffic, have arrived at the best result during the past year. Thus, leaving live stock and miscellaneous receipts aside, the Great Northern, with '21 per cent. less from passenger traffic and '51 per cent. less from mineral traffic, had '43 per cent. more from merchandise, and earned 1'13 per cent. additional of gross receipts. The London and North Western, with '09 per cent. less from passenger traffic, '15 per cent. less from merchandise, and '29 per cent. more from mineral traffic, increased the gross receipts by only '59 per cent. The Lancashire and Yorkshire, with '22 per cent. less from passengers, '40 per cent. less from merchandise, and '79 per cent. more from minerals, had only '24 per cent. of increased gross receipts. The Manchester, Sheffield and Lincolnshire, although it had '97 per cent. more from passengers, '26 more from merchandise, and 2'05 per cent. less from minerals, had such a serious falling away of traffic (the passenger traffic only was slightly increased) that its gross receipts were actually less. The latter remark applies also to the North Eastern—it fell off in every class of traffic, although it relatively earned '07 per cent. less from passengers, '21 per cent. more from merchandise, and '36 per cent. less from mineral traffic. The Caledonian, with '43 per cent. more from passengers and '27 per cent. from minerals, had '46 per cent. less from merchandise, with reduced gross receipts also. The North British, with '96 per cent. more from passengers, '60 per cent. less from merchandise, and '56 less from minerals, earned '77 per cent. of increased gross receipts. The Midland, with 1'34 per cent. more from passengers, '85 per cent. more from merchandise, and 2'36 per cent. less from minerals, had 4'16 per cent. of increased gross receipts; and the Glasgow and South Western, with 1'74 per cent. more from passengers, '97 per cent. more from merchandise, and 2'74 per cent. less from minerals, had 8'49 per cent. of increased gross receipts. In like manner, also, the Great Eastern had '54 per cent. more from passengers, '15 per cent. more from merchandise, and '03 per cent. less from minerals, and earned 1'41 per cent. additional receipts; and the Great Western, with 1'28 per cent. more from passengers, '08 per cent. less from merchandise, and 1'20 per cent. less from minerals, had 22'28 per cent. additional gross receipts. But this result of the Great Western has to be qualified by taking the greatly increased length of line into account: with this qualification, however, it is not an unfavourable result.

It would appear to be of primary consequence for the companies, especially those having severe competition, to use every endeavour to encourage and develop passenger and merchandise, rather than mineral traffic. An immense weight of the latter is carried, a fearfully disproportionate number of trains are run, and, from the low rates prevailing for the carriage of it, for relatively little money.

WORKING EXPENDITURE will be more readily and thoroughly grasped if indicated in its relation to increase or decrease of gross receipts. In handling a subject of this kind, the same quantities have to be brought forward now and again to convey anything like a clear idea of the correlation between one part and another, and each part to the whole. In the present stage of railway accounts, there are positively no means of conducting an investigation but by comparative analysis.

Of the Southern lines, there is an increase of £76,429, or 5'49 per cent., on the London and South Western, against an increase of gross receipts of

4·99 per cent.; on the Brighton, an increase of £7,317, or ·85 per cent., against an increase of gross receipts of 1·53 per cent.; on the Chatham there is a decrease of £12,290, against an increase of gross receipts of ·20 per cent.; and there is also a decrease on the South Eastern of £23,909, coincident with reduced gross earnings of a larger amount.

The expenditure of the Metropolitan was increased £10,563, or 5·11 per cent., against increased gross receipts equal to 5·55 per cent.; and the Metropolitan District was increased £3,774, or 2·91 per cent., against 4·28 per cent. of increased gross receipts.

The Great Eastern expenditure was reduced £40,184, against an increased gross revenue of a nearly equal amount, or 1·41 per cent.; and the Great Western increased £691,423, or 22·92 per cent., against increased gross receipts equal to 22·28 per cent.

Of the Northern lines, the Great Northern increased £68,918, or 4·29 per cent., against increased gross revenue of half this amount, or 1·13 per cent.; the London and North Western increased £12,923, or ·25 per cent., against an improved gross revenue of ·59 per cent.; the expenditure of the Midland increased £159,702, or 5·02 per cent., against increased gross revenue of 4·16 per cent.; the Manchester, Sheffield and Lincolnshire expended £38,056 less, against a decreased gross revenue of £43,878; the Lancashire and Yorkshire reduced their expenditure £37,902, and improved their gross earnings ·24 per cent.; and the North Eastern expended £38,753 less, and earned £118,007 less.

Of the Scotch lines, the Caledonian expended £1,431 less, and earned £14,498 less; the North British increased the expenditure £28,159, or 2·36 per cent., against a revenue improved by ·77 per cent.; and the Glasgow and South Western expended £19,586, or 3·64 per cent., additional, and earned 8·49 per cent. additional gross receipts.

EXPENDITURE PER MILE OF LINE, like the gross earnings per mile of line, is generally reduced; but the London and South Western is increased £88, the Metropolitan District £471, the Great Northern £52, the North British £33, and the Glasgow and South Western £51; and while the two first and the last earned more than a corresponding revenue (the London and South Western had £146, the District £1,895, and the Glasgow and South Western £228 additional per mile), the North British earned only £15 additional per mile, and the Great Northern had £59 less per mile.

EXPENDITURE PER TRAIN-MILE is increased on the *d.*

Metropolitan District	...	...	...	4·64
Metropolitan	...	...	...	2·07
Great Northern	...	...	...	·18
North Eastern	...	...	...	·13
North British	...	...	...	·61

and decreased on the other lines—

Chatham	...	...	...	4·93
South Eastern	...	...	...	2·30
Great Eastern	...	...	...	2·07
Brighton	...	...	...	1·39
London and North Western	...	...	...	·97
Lancashire and Yorkshire	...	...	...	·78

	<i>d.</i>
London and South Western	·68
Caledonian	·48
Manchester, Sheffield and Lincolnshire ...	·38
Great Western	·26
Midland	·04

while the Glasgow and South Western is at the same rate as the previous year.

The PROPORTION OF GROSS EXPENDITURE TO GROSS RECEIPTS FROM ALL SOURCES is increased on the

London and North Western	·27 per cent.
Great Western	·28 "
Great Northern	1·69 "
Midland	·44 "
North Eastern	·39 "
Caledonian	·19 "
North British	·84 "

and reduced on the

Brighton	·32 "
Chatham	1·33 "
South Eastern	·54 "
Metropolitan	·16 "
Metropolitan District	·62 "
Great Eastern	2·22 "
London and North Western	·18 "
Manchester, Sheffield and Lincolnshire ...	·84 "
Lancashire and Yorkshire	1·20 "
Glasgow and South Western	2·60 "

These figures indicate, in a very rough fashion, the external results of the year, as applicable to the several lines; but it is unfortunate that no material is supplied, either in the companies' statements or in the Board of Trade returns, whereby a closer and more direct analysis could be made of the relative cost and gain of the several leading branches of the business of the lines. Nothing short of this can be considered satisfactory, for it is of the last importance that the receipts and expenditure of passenger, merchandise, and mineral traffic respectively should be given; and, notwithstanding all that has been said, and all that can or may be said, by those apparently interested in keeping the public in ignorance of these essential facts, there is no insurmountable difficulty to be overcome in doing it. That the companies do not choose or do not wish to give it, and that the Board of Trade is lukewarm on the subject, is the only reason why it is not obtainable—not by any means that it cannot be given.

Taking the material at hand, however, it may be of some consequence to draw attention to the VARIATIONS under the several heads of expenditure on the different lines; and to do this it is better to take the EXPENDITURE IN PROPORTION TO RECEIPTS, putting aside the train-mile test as a doubtful and antiquated one, existing rather by tradition, like the glory of unreformed corporations, than by any inherent importance that can be attached to it in the present imperfect form of the railway returns. Train-miles would be right enough if they were given for each class of traffic, if the average number of vehicles in each train was known, if the average gross weight of each train

and the average dead weight to paying weight was also known—if correctives such as these were given, train-miles would assume that importance which in reality they should deserve, but which cannot be given to the current indefinite article. Expenditure shown in relation to receipts, therefore, is the only alternative left.

To take Maintenance of Way and Works, Locomotive Power, and Repairs of Carriages and Waggon, the proportion of revenue cost to gross receipts is in the following order for the different companies:—

WAY, WORKS, &c.

Metropolitan	4·65	per cent. of gross receipts.
District	4·90	” ”
South Eastern... ..	6·99	” ”
Brighton	7·02	” ”
Manchester, Sheffield and Lincolnshire	7·98	” ”
Lancashire and Yorkshire	8·07	” ”
Chatham	8·90	” ”
Caledonian	10·13	” ”
Great Eastern... ..	10·33	” ”
Great Northern	10·37	” ”
Midland	10·53	” ”
London and South Western	10·81	” ”
London and North Western	10·99	” ”
North Eastern... ..	11·69	” ”
North British... ..	12·54	” ”
Great Western	13·34	” ”
Glasgow and South Western... ..	15·13	” ”

LOCOMOTIVE POWER.

Metropolitan	8·75	per cent. of gross receipts.
Manchester, Sheffield and Lincolnshire	11·19	” ”
South Eastern	12·23	” ”
Great Western... ..	12·52	” ”
North British	12·88	” ”
London and South Western	13·25	” ”
London and North Western	13·29	” ”
Caledonian	13·40	” ”
Metropolitan District	13·48	” ”
Glasgow and South Western	13·50	” ”
Brighton	14·14	” ”
Great Northern	14·17	” ”
Lancashire and Yorkshire	14·41	” ”
Great Eastern	14·59	” ”
Midland	14·71	” ”
Chatham	15·78	” ”
North Eastern... ..	17·20	” ”

REPAIRS OF CARRIAGES AND WAGGONS.

Metropolitan	1·98	per cent. of gross receipts.
Metropolitan District	2·35	” ”
London and North Western	3·50	” ”

Brighton	...	...	...	...	3·58	per cent. of gross receipts.
Chatham	...	...	...	...	3·61	" "
South Eastern	...	...	...	...	3·62	" "
Great Northern	...	...	...	...	3·73	" "
Great Western	...	...	...	...	3·86	" "
London and South Western	...	...	...	...	3·91	" "
Midland	...	...	...	...	3·94	" "
Great Eastern	...	...	...	...	4·52	" "
Manchester, Sheffield and Lincolnshire	...	...	...	...	4·68	" "
Caledonian	...	...	...	...	4·92	" "
North British	...	...	...	...	5·42	" "
Lancashire and Yorkshire	...	...	...	...	6·26	" "
Glasgow and South Western	...	...	...	...	6·89	" "
North Eastern	...	...	...	...	7·37	" "

The next, and heaviest, item is

TRAFFIC CHARGES.

Metropolitan	...	...	...	...	11·83	per cent. of gross receipts.
Metropolitan District	...	...	...	...	12·44	" "
South Eastern	...	...	...	...	12·60	" "
North Eastern	...	...	...	...	14·02	" "
Brighton	...	...	...	...	14·08	" "
Glasgow and South Western	...	...	...	...	14·26	" "
Great Western	...	...	...	...	14·29	" "
Caledonian	...	...	...	...	14·81	" "
North British	...	...	...	...	15·29	" "
Chatham and Dover	...	...	...	...	17·77	" "
Great Eastern	...	...	...	...	17·96	" "
London and North Western	...	...	...	...	18·05	" "
Manchester, Sheffield and Lincolnshire	...	...	...	...	18·16	" "
Midland	...	...	...	...	18·49	" "
Great Northern	...	...	...	...	18·57	" "
London and South Western	...	...	...	...	19·02	" "
Lancashire and Yorkshire	...	...	...	...	20·71	" "

Putting these primary working charges in their aggregate form, the companies appear in the following order:—

PRIMARY WORKING CHARGES.

Metropolitan	...	...	...	...	27·21	per cent. of gross receipts.
Metropolitan District	...	...	...	...	33·17	" "
South Eastern	...	...	...	...	35·44	" "
Brighton	...	...	...	...	38·82	" "
Manchester, Sheffield and Lincolnshire	...	...	...	...	42·01	" "
Caledonian	...	...	...	...	43·26	" "
Great Northern	...	...	...	...	44·01	" "
London and North Western	...	...	...	...	45·83	" "
Chatham	...	...	...	...	46·06	" "
North British	...	...	...	...	46·13	" "
Great Northern	...	...	...	...	46·84	" "
London and South Western	...	...	...	...	46·99	" "

Great Eastern ...	...	...	47·40	per cent. of gross receipts.
Midland ...	...	...	47 67	" "
Lancashire and Yorkshire ...	...	...	49·45	" "
Glasgow and South Western ...	...	...	49·78	" "
North Eastern ...	...	...	50·28	" "

Looking into these remarkable and widely divergent results of the primary cost of working the several lines, under each head and in the aggregate, it cannot be wholly lost sight of that the sums charged against revenue are not necessarily, in every instance, all that should be so charged: there are suspense accounts and elastic capital accounts always open to meet a difficulty and—a dividend! Assuming, however, that these charges are all above suspicion, and searching for a reason that will account for the variations, there appears only one means of solution, and that is, to refer to the source of the receipts of the several companies. Doing this, it is apparent at once that the passenger-carrying lines are worked much more cheaply than the goods lines; and again, of the latter it also appears that the greater the proportion of their receipts that are derived from mineral traffic, the higher still the working charges run up. How much of this can be put down as an absolute, and how much of it as a contingent result, cannot be ascertained with any degree of certainty. The heavy mineral-carrying lines carrying that traffic with a smaller margin of profit than other traffic thus primarily increase the proportion of their working charges; and the further consequence of having their lines filled with a heavy mixed service, of passenger, merchandise, and mineral trains, tends to still further swell their working expenses, from the extra precautionary measures that have to be adopted to ensure anything like safety from accidents. Both causes, therefore, are in active operation eating up the profits. The dearer working of lines having a heavy mineral traffic is palpable. This, coupled with the fact that the mineral-carrying lines have the least receipts per goods train-mile, opens up the question again whether the mineral traffic, in the event,—first and last and all collateral costs being duly taken into the reckoning,—is really remunerative; and further incites the desire to know exactly, as it should be clearly known and put beyond doubt, the relative gain derived from it, and from merchandise, and from passenger traffic respectively. The means of solving these questions authoritatively and conclusively are not vouchsafed to us. The question of mineral traffic in all its various aspects, however, is one of too great magnitude to discuss further here. Nor is it necessary; it has been ably and exhaustively dealt with,—so far as a skilful use of the scant available data, aided by elaborate and careful comparative analysis by an expert hand, can be termed exhaustive,—in the series of articles, already mentioned, in the *Edinburgh Review* and *Fraser's Magazine*, which it would be well if all those interested in the present and the future of railway property would read and carefully study. It would be the means of forming a public opinion that might arouse the Board of Trade from their lethargy to put the railway returns (their own and the companies') into such a form that everything worth knowing about railway business would be clear, and straightforward, and definite.

As considerable publicity has latterly been given to the question of PASSENGER DUTY, it may be of some interest to set out the incidence of it in the double form—in proportion to gross receipts, and in proportion to passenger receipts—in the order in which it fell upon the companies:—

IN PROPORTION TO GROSS RECEIPTS.

	Per cent.		Per cent.
Manchester, Sheffield & Lincolnshire ...	·43	Great Western	1·61
North Eastern	·60	Great Eastern	1·72
Caledonian	·69	London and South Western	1·91
Midland	·71	Metropolitan	2·44
Glasgow and South Western	·78	Brighton	2·47
North British	·96	Chatham	2·58
Lancashire and Yorkshire	1·06	South Eastern	2·62
Great Northern	1·16	Metropolitan District	2·88
London and North Western	1·53		

IN PROPORTION TO PASSENGER RECEIPTS.

	Per cent.		Per cent.
Manchester, Sheffield & Lincolnshire ...	1·75	Great Northern	3·14
Glasgow and South Western	2·31	London and South Western	3·18
Caledonian	2·39	Brighton	3·54
North Eastern	2·50	Chatham	3·55
Metropolitan	2·56	South Eastern	3·71
Midland	2·58	Great Eastern	3·73
North British	2·77	Great Western	4·06
Metropolitan District	2·87	London and North Western	4·44
Lancashire and Yorkshire	2·88		

The incidence of RATES and TAXES is highest on the Southern and Metropolitan lines; and COMPENSATION, particularly for personal injury, is highest on the Northern and the Scotch lines—the latter, of course, the result of mixed passenger, merchandise, and mineral traffic.

VI.—NET RECEIPTS.

		LONDON AND SOUTH WESTERN.	BRIGHTON.	CHATHAM AND DOVER.	SOUTH EASTERN.
Net Receipts from all sources	£	1,148,044	939,005	442,037	1,024,928
Do. from Trains	„	1,038,364	884,827	367,296	909,568
Do. do. per Mile... ..	„	1,511	2,535	2,310	2,748
Do. do. per Train-mile	s. d.	2 5	2 10½	2 4½	3 9½
Propn. of Gross Receipts to Parent Co.'s Capital	%	13·03	9·27	4·72	9·84
Do. Expenditure do. do.	„	7·31	4·45	2·68	4·58
Do. Net Receipts do. do.	„	5·72	4·82	2·04	5·26
Do. do. from Trains do.	„	5·17	4·54	1·70	4·67
Do. Gross Receipts to Gross Capital	„	12·21	7·84	4·54	9·25
Do. Expenditure do.	„	6·85	3·76	2·57	4·30
Do. Net Receipts do.	„	5·36	4·08	1·97	4·95
Do. do. from Trains do.	„	4·85	3·84	1·63	4·39

NET RECEIPTS—*continued.*

		METRO- POLITAN.	METRO- POLITAN DISTRICT.	GREAT EASTERN.	GREAT WESTERN.
Net Receipts from all sources	£	*386,940	151,270	1,267,221	3,324,118
Do. from Trains	„	302,685	142,178	1,197,369	3,319,784
Do. do. per Mile... ..	„	21,620	17,773	1,394	1,612
Do. do. per Train-mile	s. d.	7 0½	3 5½	2 6½	2 7¼
Propn. of Gross Receipts to Parent Co.'s Capital	%	6·79	5·20	9·22	11·78
Do. Expenditure do. do.	„	2·65	2·44	5·07	6·21
Do. Net Receipts do. do.	„	4·72	2·76	4·15	5·57
Do. do. from Trains do.	„	3·70	2·60	3·92	5·56
Do. Gross Receipts to Gross Capital	„	6·31	...	7·94	9·21
Do. Expenditure do.	„	2·47	...	4·36	4·85
Do. Net Receipts do.	„	4·39	...	3·58	4·36
Do. do. from Trains do.	„	3·44	...	3·38	4·35

NET RECEIPTS—*continued.*

		GREAT NORTHERN.	LONDON AND NORTH WESTERN.	MIDLAND.	MANCHESTER, SHEFFIELD & LINCOLN.
Net Receipts from all sources	£	1,331,827	4,189,227	2,901,490	829,247
Do. from Trains	„	1,287,888	4,187,013	2,838,290	734,141
Do. do. per Mile	„	2,012	2,565	2,293	2,824
Do. do. per Train-mile	s. d.	2 2½	2 6½	2 4½	2 10½
Propn. of Gross Receipts to Parent Co.'s Capital	%	10·99	13·55	10·51	8·25
Do. Expenditure do. do.	„	6·12	7·46	5·63	4·32
Do. Net Receipts do. do.	„	4·87	6·09	4·88	3·93
Do. do. from Trains do.	„	4·71	6·08	4·78	3·48
Do. Gross Receipts to Gross Capital	„	11·02	11·95	10·83	10·65
Do. Expenditure do.	„	6·14	6·58	5·80	5·57
Do. Net Receipts do.	„	4·88	5·37	5·03	5·08
Do. do. from Trains do.	„	4·72	5·37	4·92	4·50

NET RECEIPTS—*continued.*

		LANCA- SHIRE AND YORKSHIRE	NORTH EASTERN.	CALE- DONIAN.	NORTH BRITISH.
Net Receipts from all sources	£	1,549,451	2,936,679	1,480,069	1,041,838
Do. from Trains	„	1,526,111	2,825,110	1,380,502	1,038,667
Do. do. per Mile... ..	„	3,476	1,977	1,665	1,221
Do. do. per Train-mile	s. d.	2 8½	2 7¼	2 6½	2 5½
Propn. of Gross Receipts to Parent Co.'s Capital	%	12·53	12·22	9·41	8·33
Do. Expenditure do. do.	„	7·09	6·69	4·67	4·50
Do. Net Receipts do. do.	„	5·44	5·53	4·74	3·83
Do. do. from Trains do.	„	5·36	5·32	4·42	3·82
Do. Gross Receipts to Gross Capital	„	12·12	12·25	8·83	8·12
Do. Expenditure do.	„	6·86	6·71	4·38	4·38
Do. Net Receipts do.	„	5·26	5·54	4·45	3·74
Do. do. from Trains do.	„	5·18	5·33	4·15	3·73

* Including £48,289 from Rents of Houses, &c.

NET RECEIPTS—continued.

		GLASGOW AND SOUTH WESTERN.	GT. SOUTH. & WEST. OF IRELAND.	MID. GT. WEST. OF IRELAND.	GREAT NORTH. OF IRELAND.
Net Receipts from all sources	£	448,504	349,313	230,059	300,758
Do. from Trains	„	430,974	347,060	222,992	296,522
Do. do. per Mile... ..	„	1,359	716	537	647
Do. do. per Train-mile	s. d.	2 1 $\frac{3}{4}$	2 9 $\frac{1}{2}$	2 8 $\frac{1}{2}$	2 9 $\frac{1}{4}$
Propn. of Gross Receipts to Parent Co.'s Capital	%	11·13	10·86	12·16	12·65
Do. Expenditure do. do.	„	6·17	5·77	6·54	6·52
Do. Net Receipts do. do.	„	4·96	5·09	5·62	6·13
Do. do. from Trains do.	„	4·76	5·06	5·45	6·04
Do. Gross Receipts to Gross Capital	„	11·51	10·57	9·18	10·36
Do. Expenditure do. do.	„	6·38	5·61	4·94	5·34
Do. Net Receipts do. do.	„	5·13	4·96	4·24	5·02
Do. do. from Trains do.	„	4·93	4·93	4·11	4·95

NET RECEIPTS FROM ALL SOURCES are relatively increased beyond the increase of capital on very few of the lines, this favourable result being attained only on the London and South Western, with an increase of £47,842, or 4·35 per cent., against an increase of 1·21 per cent. of parent and 45 per cent. of gross capital; on the Brighton, with an increase of £19,952, or 2·17 per cent., against an increase of 1·49 per cent. of parent and 1·84 per cent. of gross capital; on the Chatham, with an increase of £14,330, or 3·35 per cent., against an increase of 21 per cent. of parent and 33 per cent. of gross capital; on the Metropolitan, with an increase of £19,685, or 5·36 per cent., against an increase of 1·72 per cent. of parent and 31 per cent. of gross capital; on the Metropolitan District, with an increase of £7,909, or 5·52 per cent., against a decrease of capital; on the Great Eastern, with £79,333, or 6·68 per cent., against an increase of 22 per cent. of parent and 65 per cent. of gross capital. The Great Western has an increase of net receipts amounting to £587,731, or 21·57 per cent., to contrast with an increase of 15·28 per cent. of parent capital, but the gross capital involved in the undertaking is increased 26·92 per cent., consequently the increased net receipts do not meet the corresponding increase of capital. The Glasgow and South Western presents the best features of the year, with an increase of £59,174, or 15·20 per cent., of net receipts, against an increase of 2·74 per cent. of parent and 2·83 per cent. of gross capital.

The second group of lines having an increase of net receipts LESS THAN THE INCREASE OF CAPITAL are: the London and North Western, with an increase of £41,972, or 1·01 per cent., against an increase of 2·94 per cent. of parent and 2·21 per cent. of gross capital; the Midland, with an increase of £89,834, or 3·16 per cent., against an increase of 7·71 per cent. of parent and 5·86 per cent. of gross capital; the Lancashire and Yorkshire, with an increase of £46,448, or 3·09 per cent., against an increase of 3·97 per cent. of parent and 3·84 per cent. of gross capital.

The third group of lines having an actual DECREASE OF NET RECEIPTS are: the South Eastern, reduced £4,772, with an increase of capital of

about 2 per cent. ; the Great Northern, reduced £35,163, with an increase of 8·92 per cent. of parent and 7·54 per cent. of gross capital; the Manchester, Sheffield and Lincolnshire, reduced £5,820, against an increase of capital amounting to $2\frac{3}{4}$ per cent. ; the North Eastern, reduced £79,254, against an increase of capital of about $4\frac{1}{2}$ per cent. ; the Caledonian, reduced £13,068, against an increase of capital of $1\frac{3}{4}$ per cent. ; and the North British, reduced £10,949, against an increase of 4·18 per cent. of parent and 3·02 per cent. of gross capital.

NET RECEIPTS PER MILE OF LINE are increased

£58,	or 3·99	per cent.,	on the	London and South Western,
37	„	1·48	„	Brighton,
115	„	5·24	„	Chatham,
1,424	„	8·71	„	Metropolitan District,
124	„	9·76	„	Great Eastern,
3	„	0·11	„	London and North Western,
139	„	4·16	„	Lancashire and Yorkshire,
177	„	14·97	„	Glasgow and South Western,

and reduced

£31	on the	South Eastern,
293	„	Metropolitan,
114	„	Great Western,
111	„	Great Northern,
123	„	Midland,
75	„	Manchester, Sheffield and Lincolnshire,
120	„	North Eastern,
15	„	Caledonian,
18	„	North British.

NET RECEIPTS PER TRAIN-MILE are increased

4d.	on the	Metropolitan,
6 $\frac{1}{4}$ d.	„	Metropolitan District,
2 $\frac{1}{2}$ d.	„	Great Eastern,
$\frac{1}{4}$ d.	„	Manchester, Sheffield and Lincolnshire,
1 $\frac{1}{4}$ d.	„	Lancashire and Yorkshire,
2 $\frac{3}{4}$ d.	„	Glasgow and South Western ;

and decreased

$\frac{3}{4}$ d.	{	on the	London and South Western,
			Brighton, and
			Chatham,
1 $\frac{1}{4}$ d.	„		South Eastern,
$\frac{3}{4}$ d.	„		Great Western,
1 $\frac{3}{4}$ d.	„		Great Northern,
$\frac{1}{4}$ d.	„		London and North Western,
$\frac{1}{2}$ d.	„		Midland,
1 $\frac{1}{2}$ d.	„		North Eastern,
$\frac{3}{4}$ d.	„		Caledonian,
$\frac{1}{2}$ d.	„		North British.

The PROPORTION OF GROSS RECEIPTS TO PARENT CAPITAL is increased

·47	per cent.	on the	London and South Western,
·25	„	„	Metropolitan,

·23	per cent.	on the Metropolitan District,
·11	"	" Great Eastern,
·67	"	" Great Western,
·59	"	" Glasgow and South Western.

The Brighton and Chatham have maintained their ground with the previous year, but the gross receipts of the following lines have shrunk in proportion to their capital :—

·35	per cent.	on the South Eastern,
·85	"	" Great Northern,
·32	"	" London and North Western,
·36	"	" Midland,
·44	"	" Manchester, Sheffield and Lincolnshire,
·47	"	" Lancashire and Yorkshire,
·78	"	" North Eastern,
·26	"	" Caledonian,
·31	"	" North British.

The PROPORTION OF GROSS RECEIPTS TO GROSS CAPITAL follows very closely upon the foregoing, except that the Great Western appears with a shrinkage of ·34 per cent.

The PROPORTION OF NET RECEIPTS TO PARENT CAPITAL is increased

·18	per cent.	on the London and South Western
·03	"	" Brighton,
·06	"	" Chatham,
·16	"	" Metropolitan,
·15	"	" Metropolitan District,
·25	"	" Great Eastern,
·29	"	" Great Western,
·54	"	" Glasgow and South Western.

The Brighton and Chatham, it may be remarked, had an increased proportion of net receipts merely by a relative saving in expenditure, and the Great Eastern also had a relative saving in expenditure of ·14 per cent.

The following lines show a reduction :—

·13	per cent.	on the South Eastern,
·58	"	" Great Northern,
·12	"	" London and North Western,
·22	"	" Midland,
·14	"	" Manchester, Sheffield and Lincolnshire,
·05	"	" Lancashire and Yorkshire,
·40	"	" North Eastern,
·15	"	" Caledonian,
·23	"	" North British.

The PROPORTION OF NET RECEIPTS TO GROSS CAPITAL agrees also very closely with the above in respect of parent capital, excepting again the Great Western appearing for a reduction of the proportion of net receipts of ·18 per cent.

The swelling of the capital accounts of the companies goes on, as a rule, at a more rapid rate than traffic receipts increase, consequently the profits

are being decreased year by year, particularly on the goods lines. This will be rendered clearer by tabulating the results for the past three years.

PROPORTION OF GROSS RECEIPTS TO CAPITAL.

FIRST—lines that are improving:—

		1876. Per cent.		1875. Per cent.		1874. Per cent.
Glasgow and South Western	...	11·51	...	10·91	...	10·57
London and South Western	...	12·21	...	11·68	...	12·05
Metropolitan	...	6·31	...	5·99	...	5·68
Metropolitan District	...	5·20	...	4·97	...	4·22
Great Eastern	...	7·94	...	7·88	...	8·15

The Great Eastern improved in the past year, but is not equal to its position in 1874; and the London and South Western was not equal in 1875 to its position in 1874, but made a substantial advance in the past year.

SECOND—lines nearly stationary the past year:—

		1876. Per cent.		1875. Per cent.		1874. Per cent.
Chatham	...	4·54	...	4·54	...	4·31
Brighton	...	7·84	...	7·86	...	7·66

THIRD—lines falling off in relative value:—

		1876. Per cent.		1875. Per cent.		1874. Per cent.
South Eastern	...	9·25	...	9·56	...	9·39
Great Western	...	9·21	...	9·55	...	9·43
Great Northern	...	11·02	...	11·72	...	12·05
London and North Western	...	11·95	...	12·14	...	12·18
Midland	...	10·83	...	11·00	...	11·47
Manchester, Sheffield & Lincolnshire	...	10·65	...	11·10	...	11·39
Lancashire and Yorkshire	...	12·12	...	12·55	...	12·51
North Eastern	...	12·25	...	13·04	...	12·91
Caledonian	...	10·50	...	10·73	...	10·79
North British	...	8·88	...	9·08	...	8·32

The Great Northern is very decided in the falling away of receipts relatively to the yearly additions to capital.

PROPORTION OF NET RECEIPTS TO CAPITAL.

FIRST—lines that are improving:—

		1876. Per cent.		1875. Per cent.		1874. Per cent.
Glasgow and South Western	...	5·13	...	4·58	...	4·03
Metropolitan	...	4·39	...	4·18	...	3·43
London and South Western	...	5·36	...	5·16	...	4·95
Metropolitan District	...	2·76	...	2·61	...	2·21
Chatham	...	1·97	...	1·91	...	1·76
Brighton	...	4·08	...	4·06	...	3·83
Great Eastern	...	3·58	...	3·37	...	3·50

SECOND—lines falling off in value—

				1876. Per cent.		1875. Per cent.		1874. Per cent.
South Eastern	...	...	...	4·95	..	5·06	...	4·77
Great Western	...	...	...	4·36	...	4·54	...	4·53
Great Northern	...	...	...	4·88	...	5·39	...	5·46
London and North Western	...	...	...	5·37	...	5·43	...	5·47
Midland	...	...	...	5·03	...	5·16	...	5·28
Manchester, Sheffield & Lincolnshire	...	...	...	5·08	...	5·20	...	5·45
Lancashire and Yorkshire	...	...	...	5·26	...	5·30	...	5·42
North Eastern	...	...	...	5·54	...	5·95	...	5·86
Caledonian	...	...	...	5·29	...	5·43	...	4·92
North British	...	...	...	4·09	...	4·26	...	3·49

The Great Northern appears again as the most rapidly depreciating property. The London and North Western, Midland, Manchester, Sheffield and Lincolnshire, and Lancashire and Yorkshire are continuous in their downward tendency, but to a much lesser extent. The North Eastern during the past year fell off more than any of the companies, except the Great Northern.

There are three railway questions that have been before the public for some time—the fusion of the Chatham and South Eastern Companies, the amalgamation of the Great Northern and Great Eastern (now broken off), and the joint arrangement of the Manchester, Sheffield and Lincolnshire, the Great Northern, and the Midland (also broken off); and it may be interesting to draw attention a little more to the several conditions of these lines.

First, the fusion of the Chatham and South Eastern. The Chatham improved nothing in earning power during the past year, but, by relatively curtailing revenue expenditure, improved its profits a trifle. Compared with 1874, however, it improved one-fifth per cent. in value. The South Eastern is among the delinquent companies—increasing its capital beyond the earning power and ultimate profits alike. In earning power, during the past year, it fell ·31 per cent. below 1875, and ·14 per cent. below its figure in 1874. And so in net receipts, in the past year it was ·11 per cent. below the previous year. Of the two Companies, therefore, the improvement is on the side of the Chatham.

Although the amalgamation of the Great Northern and Great Eastern has apparently fell through, their respective appearances may be noted. The Great Northern, in earning power, depreciated during the past year ·70 per cent., and, compared with 1874, 1·03 per cent. relatively to its capital in those years. In net receipts, during the past year, it fell off ·51 per cent. upon the previous year and ·58 per cent. upon 1874, relatively to the capital involved. The Great Eastern, during the past year, in earning power, is ·21 per cent. below its relative value in 1874, but is slightly improved upon 1875. In net receipts, during the past year, it is improved even upon 1874, and ·21 per cent. better in relative value than in 1875. The Great Eastern is, consequently, as a property, in the better condition.

The latest project—the joint arrangement of the Midland and Great Northern to take up the Manchester, Sheffield and Lincolnshire—has also been abandoned. The Great Northern, being disposed of already, need not be repeated. The Sheffield line is a depreciating property also, during the past

year having fell off in earning capacity, relatively to its capital, '45 per cent., and '74 per cent. upon 1874. In net receipts it fell off '12 per cent. upon 1875 and '37 per cent. upon 1874. The net receipts, in this instance, do not show the losses involved in the $4\frac{3}{4}$ millions sterling subscribed to other undertakings, but they are too serious to be left out of account. The Midland also has depreciated in earning capacity, relatively to its capital, regularly year after year, but to a less extent than the Great Northern or the Sheffield line. The depreciation amounts to '17 per cent. in the past year upon 1875 and '64 per cent. upon 1874. In net receipts it is '13 per cent. worse in the past year than in 1875, and '25 per cent. worse than in 1874. The Midland line as it stands, however, is in a better position than either of the other two Companies, and, as has been already shown, the expectations that may reasonably be anticipated from it are infinitely superior. There is no external drawback now, as heretofore, to retard its vigorous development.

To return, however, to the general question of the growth of capital: that it should outrun the growth of revenue, gross and net, is surely indication enough that deterioration has set in, and in some instances to a very marked extent. Moreover, it is not confined now to the goods lines. The passenger lines are proceeding, but to a less extent, except in the case of the South Eastern, which is prominent, in the same direction. What appeared like an epidemic in the form of capital expenditure with the national prosperity in 1871 and the following year or two, the contagion of which affected the general railway system, appears now to be endemic, having outlived the real or apparent cause of it, for each year tells plainly enough of a falling-off in the ratio of increased receipts. Not so the capital expenditure. In a period of comparative cessation in railway extension, with no tangible prospects of greatly enhanced receipts, it is carried on as recklessly as if railway administration meant to

"Sow the sands—
Throw seed to every wind that blows."

It is only a question of time and a little longer continuance of the present depression of trade, to bring dividends down. Dividends even now are inflated and upheld at about the same rate half-year after half-year, and it must be apparent to any one who reads between the lines that this can only be done by increasing the railway debt—the burden of capital. To continue to uphold the dividends, to a greater or less extent, out of the accumulations of capital cannot be possible. It is an abnormal condition of things that cannot last. The national investor has lately suffered sharply enough from the failure of foreign investments, American railway and other securities, to make it very undesirable that anything similar should overtake him at home. The present indications are not pleasant; and if stockholders are not to drift into a state of panic, sooner or later, the question should be grappled with, and measures devised to bring about a cessation of the perennial destruction of capital, and to ensure, for the future, accurate and trustworthy balance-sheets. In further proof of these remarks, the one item of working stock alone is sufficiently startling to arouse earnest attention and inquiry into the depths of the prevailing evil.

VII.—ROLLING STOCK.

			LONDON & SOUTH WESTERN.	BRIGHTON.	CHATHAM AND DOVER.	SOUTH EASTERN.
Working Stock	Locomotives	No.	359	283	150	278
	Coaching Stock... ..	"	2,148	1,962	792	1,905
	Waggon do.	"	6,006	5,341	1,727	3,861
Average Earnings per Engine		£	6,502	6,109	5,907	6,298
Do. Train-miles do.		No.	23,870	21,638	20,528	17,196

ROLLING STOCK—continued.

			METRO- POLITAN.	METRO- POLITAN DISTRICT.	GREAT EASTERN.	GREAT WESTERN.
Working Stock	Locomotives	No.	44	30	496	1,471
	Coaching Stock	"	180	152	2,012	4,177
	Waggon do.	"	15	3	10,791	32,310
Average Earnings per Engine		£	11,816	9,184	5,262	4,690
Do. Train-miles do.		No.	19,559	27,192	18,957	17,402

ROLLING STOCK—continued.

			GREAT NORTHERN.	LONDON & NORTH WESTERN.	MIDLAND.	MANCHEST. SHEFFIELD & LINCOLN.
Working Stock	Locomotives	No.	1,083	2,213	1,322	397
	Coaching Stock... ..	"	1,734	5,095	3,454	723
	Waggon do.	"	16,822	42,587	31,164	10,717
Average Earnings per Engine		£	2,727	4,157	4,674	3,790
Do. Train-miles do.		No.	10,759	14,724	17,890	12,888

ROLLING STOCK—continued.

			LANCA- SHIRE AND YORKSHIRE	NORTH EASTERN.	CALE- DONIAN.	NORTH BRITISH.
Working Stock	Locomotives	No.	675	1,364	649	467
	Coaching Stock	"	2,133	2,589	1,544	1,578
	Waggon do.	"	18,336	76,030	34,953	24,065
Average Earnings per Engine		£	5,241	4,640	4,311	4,747
Do. Train-miles do.		No.	16,810	15,826	16,722	18,018

ROLLING STOCK—*continued.*

			GLASGOW & SOUTH WESTERN.	GT. SOUTH. & WEST. OF IRELAND.	MID. GT. WEST. OF IRELAND.	GREAT NORTH. OF IRELAND.
Working Stock	Locomotives	No.	260	145	98	118
	Coaching Stock	"	717	421	260	382
	Waggon do.	"	10,514	2,530	1,943	2,197
Average Earnings per Engine		£	3,774	5,121	4,963	5,225
Do. Train-miles do.		No.	15,479	17,149	16,748	18,145

Working or rolling stock has been largely augmented during the past year, and, with some very rare exceptions, out of all proportion to the increase of traffic receipts. This will be readily understood when both are set out in tabular form:—

		INCREASE OF ENGINES.	INCREASE OF GROSS RECEIPTS.
London and South Western	...	4·97 per cent.	... 4·99 per cent.
Brighton ... ..	...	4·81	... 1·53 "
Chatham ... ..	...	5·63	... 20 "
South Eastern ... ..	...	9·02	... reduced receipts.
Metropolitan ... ..	...	—	... 5·55 per cent.
Metropolitan District ... ..	...	25·00	... 4·28 "
Great Eastern ... ..	...	4·42	... 1·41 "
Great Western ... ..	...	20·28	... 22·28 "
Great Northern ... ..	...	12·00	... 1·13 "
London and North Western ... ..	...	1·10	... 59 "
Midland ... ..	...	10·53	... 4·16 "
Manchester, Sheffield and Lincolnshire	...	6·15	... reduced receipts.
Lancashire and Yorkshire ..	...	75	... 24 per cent.
North Eastern ... ..	...	2·48	... reduced receipts.
Caledonian ... ..	...	1·72	... " "
North British ... ..	...	3·09	... 77 per cent.
Glasgow and South Western ... ..	...	4·00	... 8·49 "

The Metropolitan, with 5·55 per cent. of additional receipts, did its work without any additional engine power; the Glasgow and South Western earned 8·49 per cent. additional receipts, and only added 4 per cent. to its stock of engines; the London and South Western very nicely balanced the two quantities—increase of engines and increase of receipts. With all the others, it is a question of degree how far they have outrun the gauger. The South Eastern, Chatham, Metropolitan District, Great Northern, Manchester, Sheffield and Lincolnshire, North Eastern, and Caledonian are very glaring. The Midland, of course, had its new line, but it seems to have stocked it well. The Brighton and Great Eastern have added three times to their number of engines the proportion of increased receipts, and the North British equal to four times the receipts. The London and North Western and Lancashire and Yorkshire have erred in milder form.

Attention may be directed also to the fact that the maximum earning power per engine is reached on the Metropolitan line, with £11,816, the

* Not separated in return.
 † Receipts "gross minerals and general merchandise" added.
 ‡ Decrease.

To make the view of the position of the companies in question complete, the following illustrative of the passenger traffic, are added. [The Midland, the whole of the companies show much smaller increase in the receipts from passengers than in the numbers carried. The exceptions position of the Midland is no doubt due to the fact that through its Settle and Carlisle line it now obtains a much larger share of the through traffic than formerly. In the case of the other companies, we shall probably be right in assuming that the decrease in the receipts is caused by the extent to which travellers have of late year taken to third-class travelling. Fares are also no doubt lower where there is competition, the uniform rates of the Midland and its abolition of the second class having given a great blow to the old system of arbitrary and excessive fares on all the railway systems running to the north. Whatever the causes there can apparently be no question that the earning power of the railways, both for passengers and goods, is lower than it was:—

(FROM BOARD OF TRADE RETURNS.)

Year End Dec. 31.	Railway.	Length of line in Miles Open.	Percentage of Increase.	Number of Passengers (exclusive of Season Tickets).	Percentage of Increase.	Total Pas- senger cents from Passenger.	Percentage of Increase.
1873	London & North-Western	1,594	41.984	47,660,499	13.5	3,764,705	4.4
1877	Western	1,661	42.47	47,660,499	13.5	3,764,705	4.4
1873	Midland	1,056	22.997	403	—	1,659,348	—
1877	Midland	1,273	20.5	27,796,361	20.9	2,032,671	22.5
1873	Man. Sheffield & Lincoln	258	9.505	714	—	411,817	—
1877	Man. Sheffield & Lincoln	261	12.11	163,690	12.6	444,797	8.0
1873	Great Northern	584	13.399	892	—	1,158,743	—
1877	Great Northern	652	11.6	18,628,252	39.0	1,271,904	9.8
1873	Lancashire and Yorkshire	433	31.888	712	—	1,229,505	—
1877	Lancashire and Yorkshire	448	35.27	297,947	16.9	1,433,697	16.6
1873	North-Eastern	1,339	25.074	377	—	1,628,384	—
1877	North-Eastern	1,447	81.28	781,642	14.8	1,723,687	6.1
1873	North Staffordshire	1,183	3.848	300	—	149,564	—
1877	North Staffordshire	1,196	6.6	3,070,579	31.8	171,065	15.2

The Stock and Share Lists, together with the closing quotations in the principal stocks, will be found at page 4.

er. But the mistress must
 to answer

joined are some further figures relating to the earning power of railways in possession of a large mineral and goods traffic. The correspondent to whom we are indebted for them also offers the following observations :—

" It will be seen that, with one single exception, the tonnage has increased in a greater ratio than the receipts. Thus in the London and North-Western the increase in weight is 23·2 per cent., while in the money it is only 10·1, or not quite half ; and in two instances—Lancashire and Yorkshire goods and North Staffordshire minerals—although there is in both instances an increase in weight, yet there is in both a loss of money. The smaller receipt in proportion to the weight may arise from three causes—1, lower rates ; 2, shorter distances carried ; 3, more of a cheaper class of goods carried. The third could scarcely arise in the case of coals, which it is believed are all of the same class ; nor could it be supposed that in the aggregate it could materially affect the general merchandise ; and the same observation may be made as to the second—in the aggregate and on the average the distances of the goods carried on the same railway with the same or nearly the same mileage in work can scarcely materially vary in different years. The bulk of the smaller receipt must surely be attributable to lower rates. The only instance of the increase in the money being in a greater proportion than the increase in the tons is in the minerals on the Lancashire and Yorkshire. Altogether the figures are remarkable, and appear to open issues of considerable interest."

RAILWAY CAPITAL AND INCOME.

(FROM BOARD OF TRADE RETURNS.)

Year endg. Dec. 31.	Railway.	Minerals, Tons.	Per- centage increase.	General Merchan- dise. Tons.	Per- centage increase.
1873 } 1877 }	London & North- Western {	£24,453,743* 30,128,210*	— —	— —	— 23·2
1873 } 1877 }	Midland {	£10,044,735 11,219,941	— 11·7	£7,682,656 8,765,718	— 14·1
1873 } 1877 }	Man., Sheffield, & Lincolnshire {	3,980,239 4,580,758	— 15·1	3,858,706 4,352,916	— 12·8
1873 } 1877 }	Great Northern {	2,625,939 2,923,679	— 11·3	3,344,636 3,650,809	— 9·0
1873 } 1877 }	Lancashire and Yorkshire {	6,958,007 8,830,915	— 27·0	4,157,589 4,282,976	— 3·0
1873 } 1877 }	North-Eastern {	22,389,419 26,302,203	— 17·5	7,505,390 7,715,794	— 2·8
1873 } 1877 }	North Stafford- shire {	2,240,216 2,346,583	— 4·7	706,306 857,106	— 21·3
Year endg. Dec. 31.	Railway.	Receipts (gross) from Minerals.	Per- centage incr.	Receipts (gross) General Merchandise.	Per- centage incr.
1873 } 1877 }	London & North- Western {	£4,833,774† 5,322,769†	— —	— —	— 10·1
1873 } 1877 }	Midland {	£1,498,608 1,622,712	— 8·3	£2,430,780 2,539,348	— 4·5
1873 } 1877 }	Man., Sheffield, & Lincolnshire {	315,388 357,009	— 13·2	680,360 713,811	— 4·9
1873 } 1877 }	Great Northern {	652,250 553,124	— 0·1	974,208 1,123,745	— 15·3
1873 } 1877 }	Lancashire and Yorkshire {	545,004 707,893	— 29·9	1,404,928 1,388,058	— 1·2†
1873 } 1877 }	North-Eastern {	2,213,809 2,356,883	— 6·5	1,994,755 2,023,528	— 1·4
1873 } 1877 }	North Stafford- shire {	200,141 191,419	— 4·4†	143,002 173,778	— 20·4

* Not separated in return.

† Receipts " gross minerals and general merchandise " added.

† Decrease.

To make the view of the position of the companies in question complete, the following figures, illustrative of the passenger traffic, are added. It will be seen from them that, with the exception of the Midland, the whole of the companies show a much smaller increase in the receipts from passengers than in the numbers carried. The exceptional position of the Midland is no doubt due to the fact that through its Settle and Carlisle line it now obtains a much larger share of the through traffic than formerly. In the case of the other companies, we shall probably be right in assuming that the decrease in the receipts is caused by the extent to which travellers have of late years taken to third-class travelling. Fares are also no doubt lower where there is competition, the uniform rates of the Midland and its abolition of the second class having given a great blow to the old system of arbitrary and excessive fares on all the railway systems running to the north. Whatever the causes there can apparently be no question that the earning power of the railways, both for passengers and goods, is lower than it was :—

(FROM BOARD OF TRADE RETURNS.)

Year endg. Dec. 31.	Railway.	Length of Line in Miles Open.	Percentage of Increase.	Number of Passengers (exclusive of Season Tickets).	Percentage of Increase.	Total Re- ceipts from Passengers.	Percentage of Increase.
1873 } 1877 }	London & North- Western {	1,594.. 1,661..	— 4·2	41,984,759.. 47,660,499..	— 13·5	£3,607,590.. 3,764,705..	— 4·4
1873 } 1877 }	Midland {	1,056.. 1,273..	— 20·5	22,997,403.. 27,796,361..	— 20·9	1,659,348.. 2,032,671..	— 22·5
1873 } 1877 }	Man., Sheffield, & Lincoln {	258.. 261..	— 1·2	9,509,714.. 11,163,690..	— 12·6	411,817.. 444,797..	— 8·0
1873 } 1877 }	Great Northern {	584.. 652..	— 11·6	13,399,892.. 18,625,252..	— 39·0	1,158,743.. 1,271,904..	— 9·8
1873 } 1877 }	Lancashire and Yorkshire {	433.. 448..	— 3·5	31,838,712.. 37,297,947..	— 16·9	1,229,505.. 1,433,697..	— 16·6
1873 } 1877 }	North-Eastern {	1,339.. 1,447..	— 8·1	25,074,377.. 28,781,642..	— 14·8	1,625,384.. 1,723,687..	— 6·1
1873 } 1877 }	North Stafford- shire {	183.. 195..	— 6·6	3,845,300.. 5,070,579..	— 31·8	148,564.. 171,085..	— 15·2

The Stock and Share Lists, together with the closing quotations in the principal stocks, will be found at page 4.

Subjoined are some further figures relating to the earning power of railways in possession of a large mineral and goods traffic. The correspondent to whom we are indebted for them also offers the following observations :—

“ It will be seen that, with one single exception, the tonnage has increased in a greater ratio than the receipts. Thus in the London and North-Western the increase in weight is 23·2 per cent., while in the money it is only 10·1 or not quite half; and in two instances—Lancashire and Yorkshire goods and North Staffordshire minerals—although there is in both instances an increase in weight, yet there is in both a loss of money. The smaller receipt in proportion to the weight may arise from three causes—1, lower rates; 2, shorter distances carried; 3, more of a cheaper class of goods carried. The third could scarcely arise in the case of coals, which it is believed are all of the same class; nor could it be supposed that in the aggregate it could materially affect the general merchandise; and the same observation may be made as to the second—in the aggregate and on the average the distances of the goods carried on the same railway with the same or nearly the same mileage in work can scarcely materially vary in different years. The bulk of the smaller receipt must surely be attributable to lower rates. The only instance of the increase in the money being, in a greater proportion than the increase in the tons is in the minerals on the Lancashire and Yorkshire. Altogether the figures are remarkable, and appear to open issues of considerable interest.”

RAILWAY CAPITAL AND INCOME. (FROM BOARD OF TRADE RETURNS.)

Year endg. Dec. 31.	Railway.	Minerals, Tons.	Per- centage increase.	General Merchan- dise. Tons.	Per- centage increase.
1873	London & North-	£24,453,743*			
1877	Western	30,128,210*			23·2
1873	Midland	£10,044,735	.. —	£7,682,656	.. —
1877		11,219,941	.. 11·7	8,765,718	.. 14·1
1873	Man., Sheffield, &	3,980,239	.. —	3,858,706	.. —
1877	Lincolnshire	4,580,758	.. 15·1	4,352,916	.. 12·8
1873	Great Northern	2,625,939	.. —	3,344,636	.. —
1877		2,923,679	.. 11·3	3,650,809	.. 9·0
1873	Lancashire and	6,958,007	.. —	4,157,589	.. —
1877	Yorkshire	8,830,915	.. 27·0	4,282,976	.. 3·0
1873	North-Eastern	22,389,419	.. —	7,505,390	.. —
1877		26,302,203	.. 17·5	7,715,794	.. 2·8
1873	North Stafford-	2,240,216	.. —	706,306	.. —
1877	shire	2,346,583	.. 4·7	857,106	.. 21·3
Year endg. Dec. 31.	Railway.	Receipts (gross) from Minerals.	Per- centage incr.	Receipts (gross) from General Merchandise.	Per- centage incr.
1873	London & North-	£4,833,774†			
1877	Western	5,322,769†			10·1
1873	Midland	£1,498,608	.. —	£2,430,780	.. —
1877		1,622,712	.. 8·3	2,539,348	.. 4·5
1873	Man., Sheffield, &	315,388	.. —	680,360	.. —
1877	Lincolnshire	357,009	.. 13·2	713,811	.. 4·9
1873	Great Northern	552,250	.. —	974,208	.. —
1877		553,124	.. 0·1	1,123,745	.. 15·3
1873	Lancashire and	545,004	.. —	1,404,928	.. —
1877	Yorkshire	707,893	.. 29·9	1,368,058	.. 12·1
1873	North-Eastern	2,213,809	.. —	1,994,755	.. —
1877		2,356,883	.. 6·5	2,023,528	.. 1·4
1873	North Stafford-	200,141	.. —	143,002	.. —
1877	shire	181,419	.. 4·4	173,775	.. 6·0

Metropolitan District and the Southern lines following, the minimum of £2,727 being shown on the Great Northern— $4\frac{1}{3}$ engines on the latter line earning the same as ONE on the Metropolitan. The Metropolitan and Southern lines, excepting the South Eastern, have also a greater average train-mileage per engine than the Northern lines—the least work being again shown against the Great Northern.

				INCREASE OF COACHING STOCK.	INCREASE OF RECEIPTS FROM PASSENGER TRAINS.
London and South Western	...	...	...	1.51 per cent.	3.39 per cent.
Brighton	...	...	...	2.31 "	.44 "
Chatham	...	...	...	.89 "	2.04 "
South Eastern	...	...	...	3.31 "	reduced receipts.
Metropolitan	...	...	...	—	6.00 per cent.
Metropolitan District	...	...	...	—	5.82 "
Great Eastern	...	...	...	8.93 "	2.59 "
Great Western	...	...	...	21.88 "	25.85 "
Great Northern	...	...	...	1.22 "	.63 "
London and North Western	...	...	...	.95 "	.35 "
Midland	...	...	...	10.49 "	8.79 "
Manchester, Sheffield and Lincolnshire	...	...	...	3.73 "	1.37 "
Lancashire and Yorkshire	...	...	...	.19 "	reduced receipts.
North Eastern	...	...	...	3.60 "	" "
Caledonian	...	...	...	1.31 "	.84 per cent.
North British	...	...	...	.77 "	3.36 "
Glasgow and South Western	...	...	...	7.17 "	13.88 "

In this instance the Glasgow and South Western, the Metropolitan lines, Chatham, London and South Western, North British, and Great Western appear on the favourable side, but the South Eastern, Great Eastern, Manchester, Sheffield and Lincolnshire, and North Eastern are prominently unfavourable; the others, to a lesser extent, are in the same direction.

				INCREASE OF WAGGON STOCK.	INCREASE OF GOODS TRAFFIC.
London and South Western	...	...	...	2.30 per cent.	7.77 per cent.
Brighton	...	...	...	16.97 "	5.80 "
Chatham	...	...	...	46.35 "	reduced receipts.
South Eastern	...	...	...	0.26 "	" "
Metropolitan	...	...	...	—	1.60 per cent.
Great Eastern	...	...	...	2.99 "	1.55 "
Great Western	...	...	...	16.92 "	18.40 "
Great Northern	...	...	...	2.73 "	1.18 "
London and North Western	...	...	...	0.90 "	0.76 "
Midland	...	...	...	0.40 "	2.01 "
Manchester, Sheffield and Lincolnshire	...	...	...	3.29 "	reduced receipts.
Lancashire and Yorkshire	...	...	...	2.04 "	1.00 per cent.
North Eastern	...	...	...	—	reduced receipts.
Caledonian	...	...	...	6.75 "	" "
North British	...	...	...	6.92 "	" "
Glasgow and South Western	...	...	...	0.51 "	5.70 per cent.

Here, again, the London and South Western, the Metropolitan, and Glasgow and South Western, as well as the Midland, are on the right side, with increased receipts beyond the increase of waggon stock; but the disparity

in the opposite direction on the Chatham and Brighton is astounding, and striking enough also on the Caledonian, North British, and Manchester, Sheffield and Lincolnshire. The South Eastern, Great Eastern, Great Northern, Lancashire and Yorkshire, and London and North Western (the latter but little) are all stocking their lines with waggons beyond the additional earning power.

To throw a little more light on this matter, so serious in its appearances, the subjoined figures have been gathered from the companies' reports, as it strangely enough happens that such important information, or, indeed, any information about capital expenditure, cannot be obtained from the Board of Trade Railway Returns:—

WORKING STOCK EXPENDITURE DURING THE YEAR 1876, AS DERIVED FROM THE COMPANIES' REPORTS.							
Company.	Total Capital of Company.	Capital Cost of Working Stock.	Proportion of Capital Cost of Working Stock to Total Capital.	Amount added to Capital for Working Stock during the Year.	Amount expended in Repairs and Renewals of Working Stock during the Year.	Proportion of additional Cost of Working Stock charged to Capital during the Year.	Proportion of cost of Repairs and Renewals to Total Capital cost of Working Stock.
	£	£	Percent.	£	£	Per cent.	Per cent.
London & Sth. Western	19,992,781	2,230,588	11·16	146,924	215,188	6·59	9·65
Brighton & South Coast	18,796,555	1,476,926	7·86	142,719	126,280	9·66	8·55
Chatham and Dover ...	22,100,815	1,203,016	5·44	73,159	80,878	6·08	6·72
South Eastern	19,814,178	1,511,189	7·63	82,111	120,863	5·43	8·00
Metropolitan... ..	8,248,800	263,747	3·20	1,031	18,767	·39	7·11
Metropolitan District...	5,497,312	137,273	2·50	15,887	11,713	11·57	8·53
Great Eastern	30,968,095	Insufficiently stated.	...	157,743	248,106	...	...
Great Western	60,645,217	7,154,368	11·79	122,916	628,743	1·72	8·79
Great Northern	27,334,125	3,327,691	12·17	186,386	246,417	5·60	7·40
London & Nth. Western	69,354,275	7,263,769	10·47	88,502	702,104	1·22	9·67
Midland... ..	59,814,058	6,963,167	11·64	535,175	575,010	7·68	8·26
Manch. Sheffield & Lin.	21,567,468	1,975,374	9·16	102,603	178,459	5·19	9·03
Lancashire & Yorkshire	29,634,047	3,601,595	12·15	53,582	414,309	1·49	11·50
North Eastern	53,372,675	9,030,968	16·92	315,190	877,827	3·49	9·72
Caledonian	32,706,500	4,380,447	13·39	165,812	271,363	3·78	6·19
North British	27,379,647	3,413,478	12·47	161,694	228,088	4·74	6·68
Glasgow & Sth. Western	9,337,750	1,396,315	14·95	51,043	119,682	3·65	8·57

N.B.—The London and North Western and Lancashire and Yorkshire Companies show in their reports the separate cost of Engine Stock, Carriage Stock, and Waggon Stock. The other companies only give the collective amount. The separate cost of Passenger, Merchandise, and Mineral Engines, the separate cost of Coaching Stock, the separate cost of Merchandise Plant and of Mineral Plant should be given, also the cost of repairs and renewals separately for each class; and then the relative cost of maintenance and the relative earning power of *each class* would be readily discoverable—very desirable and very needful information to have.

There is a great deal of suggestive matter in this table, but it is not by any means of a cheering kind.

In the first place, it will be observed that the proportion of the capital cost of the working stock to the total capital of the passenger lines is very

much less than on the goods lines, the extremes being the Metropolitan District, with 2·50 per cent. of its total capital invested in working stock, and 3·20 per cent. on the Metropolitan, as against 16·92 per cent. on the North Eastern, 14·95 per cent. on the Glasgow and South Western, and 13·39 per cent. on the Caledonian, the first being the extreme of passenger lines and the others the heaviest mineral carriers. The cost of equipment, therefore, seems to rise rapidly with mineral traffic. Moreover, there are numbers of traders' waggons on the mineral-carrying lines that are not included, but which, when they are purchased up, will further swell the capital cost of their working stock.

The next point of interest is to find out the relative earning power of the working stock of the several companies.

1st. The lines of which the working stock earns in gross receipts MORE than the capital cost, during every year :—

			CAPITAL COST OF WORKING STOCK.		GROSS TRAFFIC RECEIPTS.
Metropolitan District	...	...	£137,273	...	£275,512
Metropolitan	...	...	263,747	...	519,922
Brighton	...	...	1,476,926	...	1,729,091
South Eastern	...	...	1,511,189	...	1,750,970
London and South Western...	...	...	2,230,588	...	2,334,201
London and North Western	...	...	7,263,769	...	9,200,569

2nd. The lines of which the working stock earns in gross receipts LESS than the capital cost, during every year :—

			CAPITAL COST OF WORKING STOCK.		GROSS TRAFFIC RECEIPTS.
Great Western	...	...	£7,154,368	...	£6,899,780
Midland	...	...	6,963,167	...	6,179,539
Lancashire and Yorkshire	...	...	3,601,595	...	3,537,932
Great Northern	...	...	3,327,691	...	2,953,102
Manchester, Sheffield & Lincolnshire	...	...	1,975,374	...	1,504,534
Chatham	...	...	1,203,016	...	886,142
North British	...	...	3,413,478	...	2,216,841
North Eastern	...	...	9,030,968	...	6,328,680
Glasgow and South Western	...	...	1,396,315	...	981,222
Caledonian	...	...	4,380,447	...	2,798,189

What a difference between the working stock of the Metropolitan lines earning nearly double their value in gross receipts every year, the Brighton and South Eastern earning 17 and 16 per cent. respectively over the value of their working stock, and thence attenuated down to 30 per cent. less than the value on the North Eastern and Glasgow and South Western, and 36 per cent. less on the Caledonian.* The Chatham, as a passenger line, takes an anomalous position—the mere mention, however, is sufficient, the cause will be understood. Of the goods lines, the London and North Western takes a very good position in the earning power of its working stock, nor does it appear so disproportionate as some of its neighbours in the current charges to capital. By referring to the table again, it will be seen that the only two companies that have dealt fairly with capital during the year are the Metropolitan and the Glasgow and South Western. The Metropolitan District, Brighton, Chatham, South Eastern, Great Northern, Manchester, Sheffield and Lincolnshire, North Eastern, Caledonian, and North British have been excessive in

* Those who care to follow this matter further will find it very suggestively and ably dealt with by Mr. F. R. Conder, C.E., in *Fraser's Magazine*, September, 1877.

capital outlay; the other companies have been more temperate, but still in excess of what increase of gross receipts would warrant. (Although gross receipts have been the criterion used, it will be readily understood that it is one more favourable to the companies than correct in itself. The increase of net receipts from traffic would be a better ultimate test to apply of whether capital outlay on rolling stock, or any other addition to lines open for traffic, was proper and legitimate.)

All the lines are having capital freely expended upon them for working stock—both passenger lines and goods lines—in some instances exceeding and in others nearly equalling the amounts charged to revenue, and the estimated further expenditure shows the same process is to be continued. According to the rate of expenditure on the Metropolitan District, for example, putting what is charged to capital and revenue together, the whole rolling stock would be renewed in something less than FIVE YEARS, in a trifle longer period on the Brighton, in something over six years on the London and South Western, and so on. At the current rate of annual outlay, in a very few years, a line, the working stock of which earns its own value in a year, will be regarded as a phenomenon. The number is already very limited. One company (the Caledonian) is understood, for some years past, to have based its expenditure on working stock on the train-mile principle. If, with the third largest proportionate capital cost of working stock, to expend, by way of upholding it, little over 6 per cent. annually of its value out of revenue be the result of that plan, the prudence and policy of it is very open to doubt; and a continuance in the same groove will mean either deterioration of the plant or the usual resort—large capital outlay. This capital outlay is inexplicable on any reasonable supposition of revenue bearing its fair and proper burdens. Or, if it does, if it is to be accepted as incontrovertible that any sums fairly chargeable to revenue, for the maintenance and renewal of rolling stock in good working order and condition, are so charged, and yet that the companies, to meet their increased weight of traffic (in contradistinction to increased receipts, gross or net), are forced, by the strain upon the resources of their existing plant, into investing in a large further supply, and, being additional, charge it to capital; then it must be concluded that they are indulging in the luxury of increasing their weight of traffic at a very decided loss—keeping revenue expenditure at a high rate, and at the same time having to relieve it by mulcting capital severely. If increased traffic is carried, and yet practically does not pay, it must be taken for granted that there is an object involved in it, and that object seems to be to use the increased gross receipts as a decoy to take shareholders off the scent of the increase—and very disproportionate increase—of capital, while a daring, wasteful, and radically vicious policy is being carried on,—

“The bottom poison, and the top o’erstrawed
With sweets.”

All this only tends to show more clearly how absolutely necessary it is to have fuller and more explicit information than is now obtainable into the length and breadth of railway polity. The veil must be thrust aside, the mystery dissipated, the household examined in every corner, and some drastic measures taken whereby every feature can be thoroughly scanned and every movement be understood.

It now only remains to say a few words regarding the train-service and cognate questions of accidents, and the extent of the precautions taken to prevent them in the form of the Block and Interlocking systems of working.

VIII.—TRAIN SERVICE, BLOCK SYSTEM, ACCIDENTS, &c.

			LONDON & SOUTH WESTERN.	BRIGHTON.	CHATHAM & DOVER.	SOUTH EASTERN.
Train-miles	Passenger Trains	Miles	6,065,139	5,076,910	2,534,260	3,829,183
	Merch. & Mineral Trains	"	2,504,367	1,046,617	544,964	951,264
	Total	"	8,569,506	6,123,527	3,079,224	4,780,447
Proportion of Train- miles per Mile of Line	Passenger Trains	No.	8,829	14,547	15,939	11,568
	Merch. & Mineral Trains	"	3,645	2,999	3,427	2,874
	Total	"	12,474	17,546	19,366	14,442
Average interval between Trains (say } 330 days in the year, $\frac{2}{3}$ off for Sundays)		Mins.	38	27	25	33
Proportion of Signal and Point Levers } interlocked		%	75	71	57	41
Do. Passenger Line on Absolute Block		"	94	100	100	97
Accidents	No. of Train Accidents	No.	4	7	1	1
	Pass. Killed } From causes beyond {	"	...	...	...	...
	Do. Injured } their control {	"	6	51	1	17
	Propn. of Accidents to No. of Trains	1 in	3,118	2,506	19,366	14,442
	Do. per million Passengers carried	"	5.60	4.13	22.21	23.63
Accidents	Proportion Killed } Per million of {	"	...	...	...	...
	Do. Injured } Passengers {	"	3.74	0.57	22.21	1.39

TRAIN SERVICE, BLOCK SYSTEM, ACCIDENTS, &c.—continued.

			METRO- POLITAN.	METRO- POLITAN DISTRICT.	GREAT EASTERN.	GREAT WESTERN.
Train-miles	Passenger Trains	Miles	860,597	815,765	5,694,658	12,158,899
	Merch. & Mineral Trains	"	...	...	3,708,027	13,440,379
	Total	"	860,597	815,765	9,402,685	25,599,278
Proportion of Train- miles per Mile of Line	Passenger Trains	No.	61,471	101,971	6,629	5,905
	Merch. & Mineral Trains	"	...	...	4,317	6,528
	Total	"	61,471	101,971	10,946	12,433
Average interval between Trains (say } 330 days in the year, $\frac{2}{3}$ off for Sundays)		Mins.	8	5	43	38
Proportion of Signal and Point Levers } interlocked.		%	100	100	41	66
Do. Passenger Line on Absolute Block		"	80	100	35	65
Accidents	No. of Train Accidents	No.	1	2	8	19
	Pass. Killed } From causes beyond {	"	...	1	...	...
	Do. Injured } their control {	"	36	48	25	58
	Propn. of Accidents to No. of Trains	1 in	61,471	50,985	1,368	654
	Do. per million Passengers carried	"	50.67	13.70	4.69	2.22
Accidents	Proportion Killed } Per million of {	"	...	27.41	...	...
	Do. Injured } Passengers {	"	1.41	0.57	1.50	0.73

TRAIN SERVICE, BLOCK SYSTEM, ACCIDENTS, &c.—*continued.*

			GREAT NORTHERN.	LONDON & NORTH WESTERN.	MIDLAND.	MANCHESTER, SHEFFIELD & LINCOLN.
Train-miles	Passenger Trains	Miles	5,657,670	15,577,170	8,858,034	1,856,792
	Merch. & Mineral Trains	"	5,994,527	17,006,343	14,793,512	3,259,879
	Total	"	11,652,197	32,583,513	23,651,546	5,116,671
Proportion of Train- miles per Mile of Line	Passenger Trains	No.	8,840	9,545	7,155	7,141
	Merch. & Mineral Trains	"	9,366	10,420	11,950	12,538
	Total	"	18,206	19,965	19,105	19,679
Average interval between Trains (say } 330 days in the year, $\frac{2}{3}$ off for Sundays)		Mins.	26	24	25	24
Proportion of Signal and Point Levers } interlocked		%	74	73	72	39
Do. Passenger Line on Absolute Block		"	58	66	74	29
Accidents	No. of Train Accidents	No.	6	17	9	3
	Pass. Killed } From causes beyond {	"	17	...	...	...
	Do. Injured } their control	"	184	109	48	15
	Propn. of Accidents to No. of Trains	1 in	3,084	1,174	2,123	6,550
	Do. per million Passengers carried	"	3.02	2.75	3.19	3.70
	Proportion Killed } per million of {	"	1.07	...	...	...
	Do. Injured } Passengers	"	0.10	0.43	0.60	0.74

TRAIN SERVICE, BLOCK SYSTEM, ACCIDENTS, &c.—*continued.*

			LANCA- SHIRE & YORKSHIRE	NORTH EASTERN.	CALE- DONIAN.	NORTH BRITISH.
Train-miles	Passenger Trains	Miles	5,712,559	7,712,313	4,346,680	3,790,127
	Merch. & Mineral Trains	"	5,634,287	13,874,995	6,506,177	4,624,326
	Total	"	11,346,846	21,587,308	10,852,857	8,414,453
Proportion of Train- miles per Mile of Line	Passenger Trains	No.	13,013	5,397	5,243	4,454
	Merch. & Mineral Trains	"	12,834	9,709	7,848	5,434
	Total	"	25,847	15,106	13,091	9,888
Average interval between Trains (say } 330 days in the year, $\frac{2}{3}$ off for Sundays)		Mins.	18	31	36	48
Proportion of Signal and Point Levers } interlocked		%	87	84	95	29
Do. Passenger Line on Absolute Block		"	67	73	52	21
Accidents	No. of Train Accidents	No.	11	11	8	4
	Pass. Killed } From causes beyond {	"	3	...	...	...
	Do. Injured } their control	"	104	24	67	32
	Propn. of Accidents to No. of Trains	1 in	2,350	1,373	1,636	2,472
	Do. per million Passengers carried	"	3.34	2.68	1.77	3.60
	Proportion Killed } Per million of {	"	12.26	...	...	...
	Do. Injured } Passengers	"	0.35	1.23	0.21	0.45

TRAIN SERVICE, BLOCK SYSTEM, ACCIDENTS, &c.—*continued.*

			GLASGOW & SOUTH WESTERN.	GT. SOUTH & WEST. OF IRELAND.	MID. GT. WEST. OF IRELAND.	GREAT NORTH, OF IRELAND.
Train-miles	Passenger Trains	Miles	1,654,039	1,526,359	1,013,937	1,453,077
	Merch. & Mineral Trains	"	2,370,713	960,335	627,421	688,040
	Total	"	4,024,752	2,486,694	1,641,358	2,141,117
Proportion of Train- miles per Mile of Line	Passenger Trains	No.	5,218	3,147	2,443	3,173
	Merch. & Mineral Trains	"	7,478	1,980	1,512	1,502
	Total	"	12,696	5,127	3,955	4,675
Average interval between Trains (say } 330 days in the year, $\frac{2}{3}$ off for Sundays }		Mins.	37	92	120	101
Proportion of Signal and Point Levers } interlocked }		%	50	23	32	16
Do. Passenger Line on Absolute Block		"	17	...	5	...
Accidents	No. of Train Accidents	No.	3	1	1	2
	Pass. Killed } From causes beyond {	"	...	...	...	...
	Do. Injured } their control {					
	Propn. of Accidents to No. of Trains	1 in	4,232	5,127	3,955	2,337
	Do. per million Passengers carried	"	1.98	2.29	1.03	1.74
	Proportion Killed } Per million of {	"	...	...	...	...
	Do. Injured } Passengers {					

TRAIN-MILES.—The increase or decrease of the mileage of trains does not strictly follow the rise or fall of the earnings of the lines. The tendency during the past year has been rather to increase the running beyond the earnings, hence, as already shown, most of the companies have reduced their train-mile receipts. It would be practically going over the same ground again, dealt with in passenger and goods earnings, and mean train-mile receipts, and net receipts respectively, to go into any further detail, however. The great increase of train-miles of the Chatham may be noted. The Managing Director of this line has pronounced himself in favour of "touting" with train-service. His experience must be accepted as worth having; and acknowledging the advantage of it, therefore, as applied to competing lines serving a populous suburban district, it must be taken, subject to the conditions being healthy,—while suiting the public and adding to the revenue, that the ultimate profits are beyond question. Touting, at all events, can have little effect or none upon merchandise or mineral traffic; and it was in the latter that the Chatham had the greatest relative increase in running during the year beyond all the lines, and, as a consequence, showed the greatest depreciation in goods train-mile earnings!

THE PROPORTION OF TRAINS PER MILE OF LINE is increased on all the Southern lines, and on the Great Eastern, Great Northern, London and North Western, Lancashire and Yorkshire, and on the Scotch lines; reduced on the Metropolitan lines, the Great Western, Midland, Manchester, Sheffield and Lincolnshire, and North Eastern; consequently

THE AVERAGE INTERVAL BETWEEN TRAINS is lessened on three of the

southern lines—the South Eastern virtually retaining the same interval as in the previous year, lessened also on the Great Eastern, slightly on the Great Northern, Caledonian, and Glasgow and South Western: the others either remain the same or have stretched the time a little.

These averages of time between trains, however, are but dim lights, and convey no adequate conception of the short intervals between trains, during the busy hours of the day, on crowded sections of the lines.

NUMBER OF TRAIN ACCIDENTS, AND PASSENGERS KILLED AND INJURED.—This subject is a popular if not a pleasant one. A glance will show that the principal delinquents are the companies having a crowded and mixed train service—passengers on the Metropolitan and Southern lines enjoying an immunity from danger that is not obtained on the Northern lines. But, "*La carrière ouverte aux talons*"—the implements to him who can handle them—the author of "*The Battles of Peace*"* has so dexterously done his work that further comment, in this direction, is unnecessary.

The accident returns are capable of improvement. It is exceedingly difficult to glean final results of the actual number of passengers killed and injured, from the different causes, on the different lines; and of the servants of the several companies killed and injured. These should be easily derivable, whether or not inquired into by the inspecting officers. The number of servants of each company, and of each class, actually engaged in traffic working should be given; not necessarily the whole staff of the companies, for there are numbers of men who have no connection with railway work, as such, and these, if given, should be classed separately. It is of consequence to know the proportion of accidents to the men of each class concerned in the working. Accidents to servants and accidents to passengers are too seriously and too closely allied—like causes being in operation in each case, and contributory one to the other—to be lost sight of, as, comparatively speaking, they are, from the insufficient data supplied in the official returns. Rather sharp practice, also, is followed in classing accidents under two main heads—"Beyond their own control," and "Want of caution or their own misconduct." When passengers are killed or injured from falling between carriages and platforms, should they be classified under the head of "Want of caution or their own misconduct?" when the whole difficulty would be met and the danger eliminated by continuous footboards and uniform height of station platforms. In like manner, should servants killed or injured in coupling or uncoupling engines and carriages or waggons in motion, or in fly-shunting—should they be INVARIABLY classed under "Want of caution or their own misconduct?" when want of siding accommodation, want of time, and the exigencies that hourly arise when there is a heavy service of trains, running at different rates of speed, is the primary cause; moreover, from practices in which railway men have been trained—under the eyes of their superior officers—notwithstanding the stereotyped rules to the contrary!

The ABSOLUTE BLOCK SYSTEM of working may be said to be universal on the Southern and Metropolitan lines, but of the other Northern lines, the highest proportion is 73 per cent. of the North Eastern and 74 per cent. of the Midland. The least proportion is still on the Manchester, Sheffield and Lincolnshire, with 29 per cent., notwithstanding a train service as heavy as

* The question of accidents is a prominent one throughout the series of articles already referred to, but is dealt with specifically, under the above title, in *Fraser's Magazine*, June, 1877.

			LONDON AND SOUTH WESTERN.	BRIGHTON.	CHATHAM.	SOUTH EASTERN.	METRO-POLITAN.	METRO-POLITAN DISTRICT.	GREAT EASTERN.	GREAT WESTERN.	GREAT NORTHERN.	LONDON AND NORTH WESTERN.	MIDLAND.	MANCHESTER, SHEFFIELD & LINCOLN.	LANCASHIRE AND YORKSHIRE.	NORTH EASTERN.	CALEDONIAN.	NORTH BRITISH.	GLASGOW AND SOUTH WESTERN.	GT. SOUTH & WEST. OF IRELAND.	MID. GT. WEST. OF IRELAND.		
I.																							
a	Increase of Parent Capital	£	239,905	246,816	44,592	388,569	138,601	22,920	78,345	7,908,231	2,239,260	1,962,154	1,254,618	559,967	1,087,140	2,261,969	452,564	995,285	241,051	157,180	99,906		
a	%		1.21	1.19	.21	2.03	1.72	decrease	.22	15.28	8.92	2.94	7.71	2.73	3.97	4.45	1.78	4.18	2.74	2.31	2.50		
a	Increase of Gross Capital... ..	£	96,587	416,155	75,078	386,560	26,851	...	229,386	16,198,283	1,913,393	1,689,668	3,193,937	...	1,087,680	2,337,356	471,682	747,482	241,051	157,168	121,291		
a	%		.45	1.81	.33	1.90	.31	...	.65	26.92	7.54	2.21	5.86	...	3.84	4.61	1.71	3.02	2.83	2.29	2.29
b	Proportion of Ordinary Stock, Parent Co. (plus or minus)	Miles	+	-11	-53	-14	-28	+1.00	+	-17	...	+	-133	-2.44	+	-196	+	4.61	+	-1.45	+	-1.45	
b	Increase of length of line	Miles	...	2	4	...	1	...	4	460	14	28	99	...	2	23	3	...	2	20	...		
b	%		.29	1.16	1.27	...	7.70	...	.47	28.77	2.23	1.74	8.69	...	decrease	1.63	.36	...	.63	4.30	...
b	Increase of Gross Capital per mile of line	£	50	442	1,324	1,168	46,463	2,855	76	539	2,103	220	1,243	1,037	2,771	1,055	449	879	590	286	292		
b	%		.16	.67	decrease	1.90	decrease	decrease	.18	decrease	5.19	.46	decrease	1.68	4.31	2.93	1.35	3.02	2.18	decrease	2.29		
II.																							
a	Increase of No. of Passengers... ..	No.	1,431,793	3,511,320	1,581,106	167,274	7,064,551	1,559,032	2,981,769	6,255,655	468,704	1,917,399	951,923	745,621	2,036,921	161,453	418,920	244,293	239,972	78,435	50,209		
a	%		6.82	13.82	7.66	.71	16.20	6.03	8.62	17.33	2.65	4.28	3.43	7.19	5.83	3.04	1.72	4.20	3.53	5.08	5.08		
a	Increase of Receipts from Passenger Trains	£	51,199	5,634	13,611	15,333	27,976	15,159	33,545	653,572	7,911	13,259	160,680	5,991	4,214	37,169	7,980	28,192	45,094	1,043	1,915		
a	%		3.39	.44	2.64	less	0.00	5.82	2.59	25.85	.63	.35	8.79	1.37	less	less	.84	3.36	13.88	less	.87		
b	Do. do. do. per mile of line	£	68	27	47	32	47	365	32	36	32	32	2	24	5	47	6	33	136	36	5		
b	%		3.08	less	.75	less	less	less	2.11	less	less	less	.12	1.42	.15	less	.52	3.34	13.19	less	.93		
c	Passenger Train-mile Receipts (plus or minus)	d.	-1½	-3½	-1½	-1	+	6	+	11½	+	1½	-1½	-½	-1½	-3	-2½	-½	-½	+	1½	+	3½
III.																							
a	Increase of Tonnage... ..	Tons.	182,704	120,787	36,361	89,298	55,971	...	139,717	2,495,824	94,545	414,419	198,336	474,926	693,314	2,179	364,581	466,634	30,259	67,440	52,547		
a	%		8.22	7.16	less	6.85	less	...	3.13	15.23	1.55	1.56	.98	less	5.80	2.94	4.95	.67	10.53	10.26	10.26		
a	Increase of Receipts from Goods Trains	£	55,712	21,097	4,825	26,351	401	...	19,560	577,810	19,827	41,131	82,818	56,906	20,914	88,598	16,903	15,297	32,962	24,870	13,367		
a	%		7.77	5.80	less	1.60	less	...	1.55	18.40	1.18	.76	2.01	less	1.00	less	less	5.70	7.24	6.24	6.24		
b	Do. do. do. per mile of line	£	78	55	47	79	109	...	16	158	27	33	221	219	69	115	28	18	92	22	37		
b	%		7.46	4.57	less	less	less	...	1.08	less	less	less	less	less	1.45	less	less	less	5.01	2.98	6.23		
c	Goods Train-mile Receipts (plus or minus)	d.	-1½	+	6½	-37½	-15	...	+	2½	-1	+	...	+	+	+	+	+	+	+	+	+	
IV.																							
a	Increase of Gross Receipts from all sources	£	124,271	27,268	2,010	28,681	29,236	11,683	39,149	1,281,154	33,755	54,895	249,596	43,878	8,546	118,007	11,498	17,210	78,760	23,143	18,521		
a	%		4.99	1.53	.20	less	5.55	4.28	1.41	22.28	1.13	.59	4.16	less	.21	less	less	.77	8.49	3.21	3.86		
b	Do. do. per mile of line	£	146	28	15	126	674	1,895	48	194	59	65	219	195	74	162	22	15	228	14	42		
b	%		4.49	.57	less	less	less	5.82	1.60	less	less	less	less	less	.93	less	less	.58	7.95	less	5.71		
c	Mean of Train-mile Receipts (plus or minus)	d.	-1½	-2½	-5½	-3½	+	6	+	11½	+	1½	-1½	-½	+	+	-1½	...	+	2½	+	1½	
V.																							
a	Increase of Expenditure	£	76,429	7,317	12,290	23,909	10,563	3,774	49,184	691,423	68,918	12,523	159,762	38,056	37,902	38,753	1,431	28,159	19,586	2,934	10,699		
a	%		5.49	.85	less	less	5.11	2.91	less	22.92	4.29	.25	5.02	less	less	less	less	2.36	3.64	.75	4.16		
b	Do. do. per mile of line	£	88	8	130	95	351	471	76	80	52	68	96	120	65	42	8	33	51	29	25		
b	%		4.89	less	less	less	less	2.91	less	less	less	less	less	less	less	less	less	2.14	3.03	less	4.00		
c	Expenditure per Train-mile (plus or minus)	d.	-68	-139	-493	-230	+	2.07	+	4.64	-2.07	+	.97	-44	-38	-78	+	.13	+	.61	+	.62	
c	Proportion of Expenditure to Gross Receipts (plus or minus)	%	+	.27	-.32	-1.33	-.54	-.16	-.62	-.22	+.28	+.169	-.18	+	-.81	-.120	+.39	+.19	+.84	-.260	+.129	+.15	
VI.																							
a	Increase of Net Receipts	£	47,842	19,951	14,330	4,772	19,685	7,909	79,333	589,731	35,163	41,972	89,834	5,820	46,448	79,254	13,068	10,949	59,174	20,209	7,822		
a	%		4.35	2.17	3.35	less	5.36	5.52	6.68	21.57	less	1.01	3.16	less	3.09	less	less	15.20	6.14	3.52	3.52		
b	Do. do. per mile of Line... ..	£	58	37	115	31	293	1,424	124	114	111	3	123	75	139	120	15	17	177	15	17		
b	%		3.99	1.18	5.24	less	less	8.71	9.76	less	less	.11	less	less	4.16	less	less	14.97	2.14	3.27	3.27		
c	Net Receipts per Train-mile (plus or minus)	d.	-2	-2	-½	-1½	+	4	+	6½	+	2½	-½	+	+	+	-½	-½	+	2½	+	1½	
VII.																							
a	Proportion of Gross Receipts to Parent Capital do. do.	%	+	.47	...	-.35	+.25	+.23	+.11	+.67	+.85	+.32	+.36	+.14	+.47	+.78	+.26	+.31	+.59	+.09	+.16		
a	Do. Expenditure do. do.	"	+	.29	-.03	-.06	+.08	+.08	+.14	+.38	+.27	+.20	+.14	+.30	+.42	+.33	+.11	+.08	+.05	+.09	+.10		
a	Do. Net Receipts do. do.	"	+	.18	+.03	+.06	+.13	+.15	+.25	+.29	+.58	+.12	+.22	+.14	+.05	+.40	+.15	+.23	+.54	+.18	+.06		
a	Do. Gross Receipts to Gross Capital do. do.	"	+	.53	-.02	...	+.32	+	+.06	+.34	+.70	+.19	+.17	+.45	+.43	+.79	+.23	+.20	+.60	+.09	+.14		
a	Do. Expenditure do. do.	"	+	.33	-.04	-.06	+.12	...	+.15	+.16	+.19	+.13	+.04	+.33	+.39	+.38	+.09	+.03	+.05	+.09	+.09		
a	Do. Net Receipts do. do.	"	+	.20	+.02	+.06	+.21	...	+.21	+.18	+.51	+.06	+.13	+.12	+.04	+.41	+.14	+.17	+.55	+.18	+.05		
VIII.																							
a	Increase of Train-miles	No.	573,377	294,749	261,940	76,730	12,901	83,238	116,137	1,956,940	423,080	632,142	1,136,312	153,049	5,165	86,396	163,167	47,735	142,481	7,614	37,183		
a	%		7.17	5.06	9.30	1.63	1.52	less	1.58	24.01	3.77	2.17	5.04	less	less	less	1.53	.57	3.67	.31	2.32		
b	Increased proportion of Trains per mile of line	"	6.86	3.80	7.92	1.63	...	...	1.11	...	1.49	.42	...	...	.41	...	1.16	.58	3.01	...	2.32
IX.																							
a	Increase of No. of Engines	No.	17	13	8	23	...	6	21	248	116	24	126	23	5	33	11	14	10	6	6		
a	%		4.97	4.81	5.63	9.02	...	25.00	4.42	20.28	12.00	1.10	10.53	6.15	.75	2.48	1.72	3.09	4.00	4.31	6.52		
a	Increase of Coaching Stock	No.	32	44	7	61	...	...	165	750	21	48	328	26	4	90	20	12	48	...	...
a	%		1.51	2.31	.69	3.31	...	...	8.93	21.88	1.22	.95	10.49	3.73	.19	3.60	1.31	.77	7.17	...	...
a	Increase of Waggon Stock	No.	135	775	547	10	...	...	313	4,676	448	379	125	311	366	128	2,211	1,558	54	60	219
a	%		2.30	16.97	46.35	.26	...	...	2.39	16.92	2.73	.90	.40	3.29	2.04	less	6.75	6.92	.51	2.43	12.71

				LONDON AND SOUTH WESTERN.	BRIGHTON	D. GT. ST. OF LAND.
I.						
a		Increase of Parent Capital	£	239,905	236,890	6
a		Increase of Gross Capital	%	1.21	1.25	50
			£	96,587	416,129	
			%	.45	1.29	
b		Proportion of Ordinary Stock, Parent Co. (plus or minus)	"	+	.11	—
b		Increase of length of line	Miles	2	1.45	
			%	.29	1.00	
b		Increase of Gross Capital per mile of line	£	50	4.292	
			%	.16	2.29	
II.						
		Increase of No. of Passengers... ..	No.	1,431,793	3,511,320	9
a			%	6.82	13.50	8
		Increase of Receipts from Passenger Trains	£	51,199	56,945	
b		Do. do. do. per mile of line	%	3.39	.87	
			£	68	5	
c		Passenger Train-mile Receipts (plus or minus)	%	3.08	.93	
			d.	— 1 $\frac{3}{4}$	—	3 $\frac{3}{4}$
III.						
		Increase of Tonnage... ..	Tons.	182,704	120,754	7
a			%	8.22	7.02	6
		Increase of Receipts from Goods Trains	£	55,712	24,037	
b		Do. do. do. per mile of line	%	7.77	5.62	
			£	78	37	
c		Goods Train-mile Receipts (plus or minus)	%	7.46	4.62	
			d.	— 1 $\frac{1}{2}$	+	2 $\frac{3}{4}$
IV.						
a		Increase of Gross Receipts from all sources	£	124,271	27,252	
			%	4.99	1.38	
b		Do. do. per mile of line	£	146	42	
			%	4.49	.87	
c		Mean of Train-mile Receipts (plus or minus)	d.	— 1 $\frac{1}{2}$	—	3 $\frac{3}{4}$
V.						
a		Increase of Expenditure	£	76,429	7,369	
			%	5.49	4.16	
b		Do. do. per mile of line	£	88	25	
			%	4.89	4.09	
c		Expenditure per Train-mile (plus or minus)	d.	— .68	— 1.62	
		Proportion of Expenditure to Gross Receipts (plus or minus)	%	+	.27	— .15
VI.						
a		Increase of Net Receipts	£	47,842	19,982	
			%	4.35	2.35	
b		Do. do per mile of Line... ..	£	58	17	
			%	3.99	1.32	
c		Net Receipts per Train-mile (plus or minus)	d.	— 3 $\frac{3}{4}$	—	4 $\frac{1}{4}$
		Proportion of Gross Receipts to Parent Capital do.	%	+	.47	— .16
a		Do. Expenditure do. do.	"	+	.29	— .10
		Do. Net Receipts do. do.	"	+	.18	— .06
		Do. Gross Receipts to Gross Capital do.	"	+	.53	— .14
a		Do. Expenditure do. do.	"	+	.33	— .09
		Do. Net Receipts do. do.	"	+	.20	— .05
VII.						
c		Increase of Train-miles	No.	573,377	294,718	
			%	7.17	5.23	
b		Increased proportion of Trains per mile of line	"	6.86	3.52	
VIII.						
a		Increase of No. of Engines	No.	17	6	
			%	4.97	4.65	
a		Increase of Coaching Stock	No.	32	2	
			%	1.51	2.00	
a		Increase of Waggon Stock	No.	135	7	
			%	2.30	16.27	

the London and North Western, which has 66 per cent. of line worked on the block system. Of the Scotch lines, the Caledonian has 52 per cent., and the Glasgow and South Western, with nearly an equal train service, has but 17 per cent., and the North British has only 21 per cent. of line worked on the block system.

The rapid extension of this method of working on the main passenger lines of the mineral-carrying companies is a necessity of the most vital importance, with a view to the reduction of the proportion of accidents, and the consequent odium and loss in compensation.

The INTERLOCKING OF SIGNAL AND POINT LEVERS is complete on the Metropolitan lines, and all the other companies have increased the proportion during the past year, the Caledonian heading the list with 95 per cent., the Lancashire and Yorkshire following with 87 per cent., the North Eastern with 84 per cent., down to the South Eastern and Great Eastern with 41 per cent., the Manchester, Sheffield and Lincolnshire with 39 per cent., and the North British with 29 per cent.

It would be of interest to know the proportion of SAFETY WHEELS under the carriages of the different companies; and by-and-by, also, some authoritative statement should be forthcoming to show the extent to which CONTINUOUS BREAKS are in use. This additional information could be included in the Interlocking and Block (more correctly, the "Signal Arrangements and Systems of Working") return, in the future.

The following table gives a SYNOPSIS of the outcome of the various lines during the past, compared with the previous year, and may serve the purpose better than any recapitulation of their leading features. It can be read as a whole or in sections, and the marginal letters will facilitate reference to the corresponding parts.

The primary object to be followed out is—

(a) the relative increase of Capital—parent and gross, Revenue, Expenditure, and Net Receipts;

and, following out the same results, in their secondary aspects,

(b) as per mile of line, and

(c) as per train-mile.

In commencing to make the circuit of the railways, to learn in detail, as far as it is permitted to be known, what had been doing during the past year, it was postulated that the expenditure of capital was in excess of the flow of traffic and the growth of revenue. This has been proved to demonstration, a conclusion by no means pleasant; nor is it relieved by any reassuring appearance of returning better conditions. On the contrary, the reasons for despondency are paramount. Capital being lavishly expended; certain traffic apparently forced to keep up appearances of increased receipts to counter-balance the capital outlay; a high rate of working expenditure the consequence, and yet not a complete and true statement of the expenditure,

relieved, apparently, by part of the burden being borne out of capital; profits reduced, and those profits, like working expenditure, necessarily questionable withal,—there is no escape from the conclusion that the existing conditions are unhealthy. Everything is in a state of tension, and evil consequences may be precipitated by the slightest further depression in the commercial atmosphere. Yet little apparent heed is taken of it, or at least any that is, is of a fitful and desultory kind, in no way commensurate to the evil, or likely to lead to any practical measures for amendment being adopted. Meanwhile, the very backbone of the railway system is yielding under the rapidly accumulating load of capital. Surely it is possible, it certainly would be better, to diagnose the disease without delay, before it assumes a more virulent form: the more chronic it becomes the more difficult it will be to effect the cure, and the longer the period of recovery. The primary necessity is light. Instead of the fragmentary, and confused, and hazy kind that is so sparingly doled out now, what is required is light such as will permit of an intelligent and systematic inquiry being undertaken into every department and function of railway life; and thus bring about such a reaction in railway administration as will cause a thorough overhaul of itself and a rearrangement of the lines of conduct hitherto pursued; a giving up of arbitrary methods, and a studying of the minutest detail of the cost and gain involved in each operation; thence arriving at, and making practical use of, that exact knowledge which, it can safely be affirmed, defiant of contradiction and incredible as it may appear, they are ignorant of at present. A complete change, therefore, is necessary in the amount and the kind of information that must henceforth be supplied purporting to guide to any fundamental insight into the interior economy of railway management, and to promote those healthy habits so essentially necessary to be maintained in all public functions affecting, as railways do, such wide national interests.

To assist towards that object, prompted by a desire to arouse an interest that will be for the ultimate advantage of the railway stockholder, and that will also lead to a fuller and wider extension of the benefits yet to be derived by the nation from the railway system, a draft of the data necessary to be collected and supplied is formulated and appended hereto. It is not put forward as an exhaustive statement, but rather as tentative towards a better.

The subsequent remarks will probably dispose of, by anticipation, the almost inevitable objections that will be urged by those having interested motives in keeping shareholders and the public in the dark—the wild assertions regarding the impossibility of collecting such data, the absurd superfluity of it, and its uselessness even if it could be got. Meantime, it may be stated that, what is demanded falls far short of what has been done, with great care and patience, in the “investigation into the cost of transportation on American railroads,” by Mr. Albert Fink, of whom Sir Henry Tyler spoke recently as having obtained confidence in America, and as the highest independent authority on how railway business should be conducted.

GENERAL OBSERVATIONS.

From the earliest dawn of railways, the vigilance of the inspecting officers of the Board of Trade, and the publicity given to their reports, has had a very salutary effect in promoting measures for the greater personal security of travellers; but no kindred steps have been taken by the department to promote the pecuniary security of investors in railway property, or to secure to the utmost their economic value to the nation. This action, indeed, even in the limited sense of securing greater safety in travelling, would be the necessary complement to the interest displayed in external matters. *Laissez-faire* has been applied to their internal economy to the most unbounded extent. The legitimate safeguards of a keen scrutiny into their internal affairs have been entirely abrogated and wholly wanting, and the wonder is, not that the present conditions of our railway system are unsatisfactory and doubtful, but that the descent into license has not been more thorough and rapid than it has been. It is the proud boast of the British people that they are thoroughly practical, and, in the main, it is undoubted. But a little more of the method of the German would occasionally be of service. This very sense of being practical, seeing the great benefits conferred by the railway system, and the nation itself growing apace during the past half-century, perhaps dulled the susceptibilities to any possible evil being latent in the system of railway administration—hid the snake in the grass. But it has been rather by virtue of the concurrent development of our commercial and industrial activity, than by any inherent superiority in the system of management, that has rendered railway enterprise in any degree a success. Notwithstanding that the line of conduct pursued was loose and based on no fixed principle, it succeeded because it had a wealthy, an active, and a flourishing nation to deal with; and would have long since ended either in complete bankruptcy or an entire reversal but for these circumstances. Even now the slightest lull in the national progress throws a cloud over it, the tendency always being, so far as prodigal outlay is concerned, to outstrip the volume of the business that flows to them.

Now, however, that a comparative cessation has taken place in the extension of the railway system; that a free outlay of money is being indulged in upon the lines already built and equipped; and seeing that every attempt to get behind the scenes to learn anything tangible regarding the internal affairs are frustrated, and at the same time contemplating the huge pile of 658 millions odd invested in railways—a colossal debt (amounting to nearly £20 per head of the whole population,* and a little over a million sterling, for which every Member of Parliament is morally responsible for the proper and legitimate application of to the benefit of the nation—the greatest good to the greatest number); the next feeling that arises is, how is the nation to continue to bear this burden, growing at the rate of 105 millions in five years? When the country suddenly awakes to the magnitude of this Second National Debt; when it discovers and fully realises that the economic advantages that ought to be derived from it are not forthcoming; when it finds that, compared with other countries, absurdly high fares are charged for the movement of travellers to and fro; that manufacturers have to pay so much for the carriage of their

* See Table IVa., page 15.

merchandise and their wares that no margin is left for them to compete in foreign markets; and when the nation in return is told that it cannot be helped, that the holders of stocks must get a dividend, that too much money had been put down as spent on the lines in former times (probably, it may be added, paid away in dividends that were not earned); and that if the Board of Trade had done its duty to the nation, and acted the part of a vigilant censor instead of standing by, Pilate-like, washing their hands of the game which they were well aware was being carried on, it could not have happened,—recrimination and heart-burning will set in. But it will be poor satisfaction to see the nation handicapped in this manner, as, in the event, it doubtless will be, if a vigilant censorship and keen scrutiny be not instituted upon further capital expenditure. True, the recuperative power of the railway system, any more than of the commercial and industrial life of the nation, is by no means spent; nevertheless, regarding both one and the other with pride, there is the greater reason why diligent and unceasing efforts should be made to conserve the former against the inroads of any insidious disease that would operate to the prejudice of the latter, remembering that, in the future, to continue to hold the same pre-eminent place in the markets of the world will tax the power of British energies to the utmost.*

The next question likely to be asked is, What can be done? And the answer is, "that many of the railway companies in America, most of them in France, and all of them in India, supply the information which the English companies refuse to give, and which the Board of Trade fails to obtain."

Ten years ago, Mr. Juland Danvers, in his annual report on the Indian Railways, was writing apologetically because he could not, from the want of complete returns, present his statement entirely after the manner of that of the Board of Trade for the railways of the United Kingdom; but, since 1874, his returns have been models of detail, far and away excelling those of the Board of Trade; and his whole object seems to be to throw light on every movement of the Indian lines. And he has had his reward. In a highly interesting and suggestive paper read by him at the Society of Arts early in the present year, he said: "Although it may not be in railways to command success, while they may deserve it, results, for our present purposes, must be the test of superiority, all due allowance being made for disadvantages attendant on age and position. The East Indian Railway stands out pre-eminently as a valuable, well-conducted, and prosperous line. Its advantages are great, and the company is now making the most of them. *The results of last year show that it yielded nearly 7 per cent. on a capital of £30,500,000; the gross receipts were upwards of £3,000,000; the working expenses about a third of that sum. The East Indian Railway has thus beaten all the English lines, some of which, by dint of debentures and debenture stock, guaranteed and preference stock, raised on favourable terms, have been able to squeeze out a dividend at the same rate, or sometimes a higher rate than the above, to the holders of a third of the whole capital expended. If the capital of the East Indian Railway had been divided in the same proportion of ordinary stock, preference stock, and loans, as the average of English lines is, the dividend to the shareholder would probably have been about 11 per*

* The thoughtful and suggestive article by Mr. Parsloe, in the *New Quarterly Magazine*, Oct., 1877, may be read with great advantage regarding these and kindred considerations. "One of the greatest needs of this country," he says, "in the existing lassitude of business, is the acquisition of some new and powerful impetus that shall revive our trade activities and improve and strengthen our commercial status."

cent., and this, too, be it remembered, with average charges for conveyance, taking goods and passengers together, one-half those in England."

There is no railway undertaking, of anything like equal extent, that can show such a result as this within the bounds of the British Empire! Mr. Danvers goes on to tell how it has been done.

"I do not forget that," he also said, "to enable this to be done, thrift and skilful management is necessary, and we have seen *on the East Indian Railway how it is possible* for an Indian line, by these means, *to carry its freight cheaper than any English railway*. Besides the usual obvious measures for attracting traffic by good accommodation, punctuality, and all reasonable conveniences, care in the selection and economy in the use of materials must be exercised, and every effort should be made to reduce the dead weight and unprofitable work, by running as few trains as possible, and filling them up to the brim; in other words, by reducing the train-mileage and increasing the train loads. There is nothing so objectionable in railway returns as a 'a beggarly account of empty boxes.' *Lessons may be continually learned by a careful study of statistics*. The very word, I am afraid, brings to some minds the idea of mystifying doubts and suspicions, but however much a mass of ill-arranged figures may confuse and deceive, properly prepared statements furnish the most instructive information for future guidance. Rates and fares, for instance, should be regulated chiefly by the cost of transport, and as such charges are made by the ton, and for the passengers per mile, it is most important that the cost of conveying a passenger and a ton a mile's length should be ascertained. This has been done by Mr. Rendel, who, by an intelligent analysis of the traffic returns, has from time to time prepared tables which show, not only the cost, but the amount earned from each passenger and each ton of goods carried one mile. The East Indian Railway Board were thus enabled to explain, in their last report, that the average sum received for carrying a passenger one mile was '38d., the average cost '14d., and, consequently, that the profit on each passenger was '24d.; that the average sum received for carrying one ton a mile was '91d., the average cost '26d., and the profit '65d. This is turning statistics to good account, for a unit of great value is arrived at, and the secret of success is revealed."

In the course of the discussion which followed the reading of the clear and comprehensive paper by Mr. Danvers, the Chairman of the East Indian Railway (Mr. Crawford) remarked that "*a very different state of things existed now from what there had been, and this was mainly owing to the extremely accurate and exhaustive statistics which had been prepared by Mr. Rendel, and the method which the companies now had of ascertaining the exact cost of doing every item of their work*. Formerly it had been thought impossible to bring grain from the upper parts of India, where large quantities were known to be stored, to Calcutta, at a profit; but this had been done, and recently grain had been brought from Cawnpore to Calcutta, a distance of 684 miles, at a cost of 6s. 4d. per quarter, and arrangements had recently been made by which a large quantity of wheat, which was raised in more distant parts of Delhi and Lahore, would be brought to Calcutta for 12s. 6d. per quarter. Was there any railway in England which could afford to carry a commodity like that such a distance, at such a cost, with profit to it? But for Mr. Rendel's method of ascertaining the cost of working, and what they could really afford to carry their goods for, these things could not be carried

on successfully. *It was this which made the difference between the English and Indian railways.* Rates of a halfpenny per mile were unheard of in this country, and there was no limit to the amount of profit which would be opened up in time to come."

Well might Mr. Scott Russell add: "There was much in the administration and utilisation of railways in India which might be followed with great advantage in England, if in nothing more than in knowing the exact cost of carriage of, and the profit and loss on, each item of goods."

The protracted discussion did not give Mr. Hyde Clarke the opportunity of speaking, but he afterwards wrote: "It was gratifying to me to find Mr. Danvers enforcing—as I have done so often, and for so many years—the importance of the statistical study of the traffic, which is so well attended to in France, and so ill attended to in this country." Going on to mention the reasons why Indian railways had been so long in reaching a remunerative return, he says, "Another cause is that ingeniously intimated by my friend Mr. Crawford, that it was 'only four years ago that his administrators or the government found out the right way of determining the rates.'" He concluded by saying, "*All these questions can only be decided, as Mr. Danvers has laid down, by statistical investigation, and it is of great importance that establishments for this purpose, which cost little money, should be adequately organised.*"

What a difference there is here. On the one hand the lines of the United Kingdom are managed year after year in the same groove, with nothing to guide the administration but arbitrary methods—the intrinsic cost and gain involved in every part, or any part, of their business they have no conception of, nor are any steps taken to arrive at this all-important knowledge; while on the lines of the Indian Empire a vigilant supervision, in every respect worthy of our admiration and praise, has brought together, as into a focus, the necessary light whence have been evolved those fundamental principles that obtain in their administration and lead them to success. They have enunciated laws, as it were, and put them in the stead of empiric methods. To attempt to compare the conventional system of administration of the home, to the positive methods pursued on the Indian lines, therefore, would be to compare Bode's empiric law of the interplanetary distances to, and further to suppose that any application of it could have superseded, the elaborate computation and profound analytic research that led to that brilliant achievement of exact science—the discovery of the planet Neptune!

Wherefore, it may naturally be asked, should such a difference exist? How does it come that by a constant and unceasing solicitude the Government of India, acting in concert with the railway administrators, have been able to collect such useful data, increasing it in extent, in minuteness, and in usefulness year after year, until now all have so much reason to be satisfied with the result; while the Board of Trade, apparently apathetic and indifferent, does practically nothing? Is it that the Government have guaranteed the interest on the capital of the Indian lines and paid away a few millions sterling, or is it that they desire to see the railway system of India serve their purpose as rulers there and bring it down to the wants and capacities of the people, that they exercise a fostering care over it? It is immaterial whence their solicitude has sprung; it has been judicious and salutary, and its success bespeaks its merits. But surely the interests of the parent country are of as much consequence as those of India. Yet no parallel action is

taken. Nay, a directly opposite course is followed. The railway companies in the United Kingdom are treated rather as private enterprises with which the State has little or no concern, and they are asked merely to furnish the rough results of their working, as an act of grace on their part, to be thrown as a sop to the public to satisfy some idle curiosity, a popular priggism, that is reluctantly gratified. The information the companies furnish and the Board of Trade issue cannot, however, be accepted as a favour; it is unworthy to be received as a gift; and something very much more tangible and definite is demanded as a right. Contrasted with the vigorous, and watchful, and successful policy pursued elsewhere, the mawkish and pusillanimous course followed by the Board of Trade has been a transparent evil to the country and to the railway interest alike. Our railway administrations are yet groping in the dark, while those of India are proceeding upon systematic, broad, and well-defined rules of conduct. And this has been attained, as boldly and frankly proclaimed on all sides, by careful collection and minute analysis of the statistical data supplied by the companies at the instance of the Government Director of the Indian Railway Companies. The Indian official returns, therefore, being models of detail, and those of the Board of Trade having outlived their era—if they were ever worthy of any era—"these anomalous forms," to adopt the simile of the great naturalist, "may be called living fossils;" they must, consequently, on the principle of natural selection—the survival of the fittest—give place to the younger and more vigorous type, just as, Mr. Darwin says, "a dominant species spreading from any region might encounter still more dominant species, and then their triumphant course, or even their existence, would cease."

To pause for a moment and consider that, after the experience of half-a-century, the true principles of railway administration should have been developed on the Indian system, which has been so much shorter time in existence—weighted, too, in the earlier days with the prestige and example of the benighted and vicious system followed in the home country—this must appear as the most derogatory fact that could be adduced against the Board of Trade, which has trodden a mere beaten course, made no effort after excellence or utility, and performed its functions in a somnolent and perfunctory manner. But not in India only has different action characterised the functionaries of the State. From the colony of New South Wales a report has been issued by Mr. Rae, the Commissioner of Railways, that equals anything yet produced, and, for the first time in any official paper, he has tabulated the ton-mile-gross, thus adding another important factor to assist in the analysis of railway working, namely, the proportion of dead weight to paying weight—in other words, the tare. Progress is visible everywhere around us, but we have none of it.

There is yet another point to which it is right to draw attention. The East Indian Railway, that Mr. Danvers, with so much just pride, calls all to witness as the type of a well-managed line, producing a dividend equal to 11 per cent. on the open stock of our English lines, earns a yearly average of about £1,800 a mile—two-thirds from goods, and the remainder from passenger traffic. The lines of the United Kingdom average £3,551 per mile, with the additional advantage of a larger proportion from passenger traffic than the Indian line—and passenger traffic is notoriously more profitable than goods traffic. Here again is a forcible endorsement of the words of Mr. Danvers: "As with men, the better trained and more cultivated will surpass

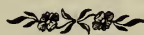
their more gifted competitors, so with railways, economy of working and CORRECT PRINCIPLES OF MANAGEMENT will ensure success more than natural advantages;" and, when he further adds, "As I believe some of the most successful commercial enterprises have been conducted so as to secure a *large aggregate profit by numerous small gains*, so should railways be managed as to produce large receipts from the small earnings of a multitude of transactions," the irony of the picture is complete as applied to the home lines. Few of our leading lines but have double, some three times, others four times and more the earnings per mile of this Indian line; but where are the corresponding profits? where is the economy in working? where the correct principles of management?

If the *correct principles of management* had been applied to our home railway system, with double the value of traffic of this favoured Indian line, *what a large aggregate profit by numerous small gains* would have been earned, and to how much greater extent would our railway system have come down to the wants and capacities of the country, and not only earned a greater profit, but at a less capital outlay? "Expressive silence," however, is the best commentary on these circumstances. The necessity for carefully-prepared details, complete statistical data, regarding every movement in railway operations, may probably be considered proved, and are demanded, therefore, in the interests of shareholders and the investing public, in the interests of the commercial and social wants of the country, and in the interest of railway administration itself, if it is ever to advance beyond the stage of empiricism and have anything like scientific method applied to it. Whatever will turn railway administration in upon itself, and cause a severe study to be entered upon, to sift to the uttermost the fundamental elements of the business, will be of untold advantage to administrators themselves, their constituents, and the public. Hitherto they have had neither chart nor compass to guide them, except the wealth of the nation, which they draw freely upon, and the credulity and helplessness of the public. Moreover, these details, and the results to be derived from them, are necessary in the interests of the Government itself, for it cannot be supposed that a closer connection will not become a necessity, a few years hence, between the State and the railways.* The State cannot always continue to so entirely abdicate its functions in leaving a practical monopoly of such extensive proportions affecting the very life of the commonweal, to exist without at least owning the lines, settling the question of rates and fares, and supervising the management, which, subordinate to the State, would be purely executive; and, whether in the hands of joint-stock companies or professional managers as lessees, the only test that would remain to be applied to them would be degrees of excellence in the performance of those executive functions. If the Government, when the time arrives for

* "In process of years the nation will probably desire to enter into the possession of many of its highways, and then the question of valuation will acquire enhanced importance. The State purchase must be based on four principles: (1) the satisfaction of the legitimate expectations of the stockholders of various orders, especially as regards giving them a higher order of security; (2) perfected organisation in one body of the able managers, officers, and men who conduct the business of the consolidated lines at the time of purchase, who should also obtain greater security of tenure; (3) more equal extension of the benefits of railway transport, on the lowest practicable terms, to the whole trade and population of the kingdom; (4) and finally, *on the principle that the country should pay the real ascertained value of the property, and not a value estimated on a fictitious basis.*"—"On the Valuation of Railways, Telegraphs, &c., &c." By William Farr, Esq., M.D., F.R.S., &c.—*Journal of the Statistical Society*, September, 1876.

their becoming owners of the railways, are not to perpetrate a similar blunder, on a much vaster scale, to that which they perpetrated in the Telegraph purchase, they must be up and doing, and set to work earnestly and vigorously to redeem past shortcomings and misdeeds.

Laissez-faire has been applied to railways to its farthest extent in nearly all internal affairs, and the result is far from being satisfactory: it is time, late as it is, to begin to temper it with a wholesome censorship, and try the effect of it. The days of a temporising policy, it is to be hoped, are doomed. The end so much desiderated is easy of attainment. The necessary capacity is available: the statistical department has but to be put in motion. The Board of Trade should no longer be allowed to remain merely to "have the honour to be"—Obstructives; as if exclaiming, like another illustrious incompetent, *J'y suis ! J'y reste !*



DRAFT FORM OF BOARD OF TRADE RAILWAY RETURNS—*continued.*

		Amount Expended to Dec. 31, 1876.	Amount Expended during year 1877.		Total.
			On Lines open for Traffic.	On New Lines. *	
CAPITAL EXPENDITURE—<i>continued.</i>					
Service Plant—Ballast Engines (No.)					
" Waggons "					
Locomotive Coal Waggons (No.)					
Stores Waggons					
Travelling Cranes					
&c., &c.					
Canals—in detail					
Steamboats (No. and tonnage)					
Harbours—in detail					
Subscriptions to other Companies—Railway—in detail					
Canal—do.					
&c., &c.					
Gross					
* In the Reports of the Companies this expenditure would be shown on lines open for traffic, and for the several lines or branches under construction, separately.					
		Owned.	Leased.	Worked.	Under C'nstruct'n
MILES OF LINE.					
Double line (if more, give details)					
Single "					
Totals					
Sidings—in single miles					
		Loaded.	Empty.		
NUMBER OF TRAINS.					
Passenger... ..				This is necessary, to arrive at the average load—dead weight and paying weight—in every train, of each kind.	
Live Stock					
Merchandise					
Minerals					
Total					
		Loaded.	Empty.		
TRAIN-MILES.					
Passenger... ..					
Live Stock					
Merchandise					
Mineral					
Total					
PILOTING OR ASSISTING MILES.					
Passenger... ..				The relative amount of piloting and of shunting to the actual train-mileage will vary according to the circumstances of a line, the traffic, and the character of the management, hence, being an element of tare, is necessary to be considered.	
Live Stock					
Merchandise					
Mineral					
SHUNTING.					
Gross number of hours as of one engine specially employed in Passenger Stations and Yards					
Gross number of hours as of one engine specially employed in Goods Stations and Yards					
Gross number of hours as of one engine specially employed in Mineral Depots					
Gross number of hours as of one horse specially employed in Passenger Stations and Yards					
Gross number of hours as of one horse specially employed in Goods Stations and Yards					
Gross number of hours as of one horse specially employed in Mineral Depots					

DRAFT FORM OF BOARD OF TRADE RAILWAY RETURNS—continued.

NUMBER OF VEHICLES MOVED.

	Loaded.	Empty.
Passenger
Live Stock
Merchandise
Mineral
Total

Live Stock Vehicles by merchandise trains to be so noted.

DEAD WEIGHT OF VEHICLES MOVED.

	Loaded Vehicles.	Empty Vehicles.
Passenger
Live Stock
Merchandise
Mineral
Total

In the case of Mineral Traffic, the number and weight of Traders' Waggons, loaded or empty, to be shown separately.

DEAD WEIGHT OF VEHICLES MOVED
ONE MILE.

	Loaded Vehicles.	Empty Vehicles.
Passenger
Live Stock
Merchandise
Mineral
Total

DEAD WEIGHT OF ENGINES AND TENDERS
WITH TRAINS.

	Loaded Trains.	Empty Trains.
Passenger
Live Stock
Merchandise
Minerals
Total

DEAD WEIGHT OF ENGINES & TENDERS
WITH TRAINS, AS FOR ONE MILE.

	Loaded Trains.	Empty Trains.
Passenger
Live Stock
Merchandise
Minerals
Total

NUMBER OF PASSENGERS.

First Class ... ..	...	...
Second Class ... ..	...	...
Third Class ... ..	...	...
Season Ticket Holders—First Class	<div> <div>equivalent</div> <div>annual</div> <div>number to be</div> <div>given.</div> </div>	}
Second „		
Third „		
Workmen ... ..	...	...

DRAFT FORM OF BOARD OF TRADE RAILWAY RETURNS—continued.

OTHER TRAFFIC BY PASSENGER TRAINS.

No. of Parcels...	...	...	...	...	...	...	...	...	...
Weight of Parcels...	...	...	...	...	...	...	...	...	...
Number of Carriages	...	...	...	...	...	...	...	...	...
„ Horses	...	...	...	...	...	...	...	...	...
„ Dogs	...	...	...	...	...	...	...	...	...
„ Mail Vans	...	...	...	...	...	...	...	...	...
„ Fish Vans	...	...	...	...	...	...	...	...	...
„ &c., &c.	...	...	...	...	...	...	...	...	...

LIVE STOCK.

	By Live Stock Trains.	By Mer- chandise Trains.
Heads of Cattle
„ Sheep
„ Pigs...
Wagon Loads—Cattle
„ Sheep
„ Pigs...

TONS OF MERCHANDISE.

First Class	...	...	...	...	...	...	...	...	...
Second „	...	...	...	...	...	...	...	...	...
Third „	...	...	...	...	...	...	...	...	...
Fourth „	...	...	...	...	...	...	...	...	...
Fifth „	...	...	...	...	...	...	...	...	...
Special and Sundry	...	...	...	...	...	...	...	...	...

TONS OF MINERALS.

	In Railway Waggons.	In Traders' Waggons.	Total.
Coal
Ironstone or Iron Ore
Pig Iron
Limestone
Other Minerals

NUMBER OF PASSENGERS CARRIED ONE
MILE.

First Class	...	...	...	...	...	...	...	...	...
Second „	...	...	...	...	...	...	...	...	...
Third „	...	...	...	...	...	...	...	...	...

Season Ticket Holders—1st Class	}	say, take the No. of each class as for a year (these several dis- tances they re- present being known), and assume the journeys at 10 per week, or 500 a year.
2nd „		
3rd „		
Workmen	...	...

DRAFT FORM OF BOARD OF TRADE RAILWAY RETURNS—*continued.*OTHER PASSENGER TRAFFIC CARRIED
ONE MILE.

No. of Parcels...	...	...	...	...	...	...	...	...	...
Weight of do. ...	...	...	...	...	...	...	...	...	...
No. of Carriages	...	...	...	...	...	...	...	...	...
Do. Horses	...	...	...	...	...	...	...	...	...
Do. Dogs	...	...	...	...	...	...	...	...	...
Do. Mail Vans	...	...	...	...	...	...	...	...	...
Do. Fish Vans	...	...	...	...	...	...	...	...	...
&c., &c.	...	...	...	...	...	...	...	...	...

NUMBER AND WAGGON LOADS OF LIVE
STOCK CARRIED ONE MILE.

	By Live Stock Trains.	By Mer- chandise Trains.
Heads of Cattle
Do. Sheep
Do. Pigs
Waggon Loads—Cattle
Sheep
Pigs

TONS OF MERCHANDISE CARRIED ONE
MILE.

First Class	...	...	...	...	...	...	...	...	...
Second „	...	...	...	...	...	...	...	...	...
Third „	...	...	...	...	...	...	...	...	...
Fourth „	...	...	...	...	...	...	...	...	...
Fifth „	...	...	...	...	...	...	...	...	...
Special and Sundry	...	...	...	...	...	...	...	...	...

TONS OF MINERALS CARRIED ONE MILE.

	In Railway Waggons.	In Traders' Waggons.
Coal
Ironstone or Iron Ore
Pig Iron
Limestone
Other Minerals

RECEIPTS FROM PASSENGER TRAFFIC.

First Class	...	...	...	...	...	...	...	...	...
Second „	...	...	...	...	...	...	...	...	...
Third „	...	...	...	...	...	...	...	...	...
Season Tickets—1st Class	...	...	...	...	...	...	...	...	...
2nd „	...	...	...	...	...	...	...	...	...
3rd „	...	...	...	...	...	...	...	...	...
Workmen's Tickets	...	...	...	...	...	...	...	...	...
Parcels	...	...	...	...	...	...	...	...	...
Carriages	...	...	...	...	...	...	...	...	...
Horses	...	...	...	...	...	...	...	...	...
Dogs	...	...	...	...	...	...	...	...	...
Mails	...	...	...	...	...	...	...	...	...
Fish	...	...	...	...	...	...	...	...	...
Excess Luggage	...	...	...	...	...	...	...	...	...
&c., &c.	...	...	...	...	...	...	...	...	...

In the Companies' Reports (and, if thought necessary, also in Board of Trade Reports), the Receipts under the several heads would be shown in detail for—

Parent line,
Leased lines,
Worked lines,
&c., &c.

Whether this should be extended to embrace every detail of working, earnings, and expenditure alike, is a question that may be left for the weight of opinion to decide. If done, it would take away all the mystery that surrounds the question of profit or loss involved in the several agreements of one company with another.

	By Live Stock Trains.	By Merchandise Trains.
Cattle
Sheep
Pigs

In the Companies' Reports (and, if thought necessary, also in Board of Trade Reports), the Receipts under the several heads would be shown in detail for—

Parent line,
Leased lines,
Worked lines,
&c., &c.

Whether this should be extended to embrace every detail of working, earnings, and expenditure alike, is a question that may be left for the weight of opinion to decide. If done, it would take away all the mystery that surrounds the question of profit or loss involved in the several agreements of one company with another.

[illegible]

	In Railway Waggons.	In Traders' Waggons.
Coal
Ironstone or Iron Ore
Pig Iron
Limestone
Other Minerals

 Like details of UP and DOWN traffic.

MAINTENANCE OF WAY, WORKS, &c.

[illegible]

In the reports of the Companies,
the
Salaries and Office Expenses,
Wages,
Materials,
would be given separately, in
the several cases.

The cost of Stores management is met by a percentage being added to the price of the stores supplied to the several departments.

Weight of Fuel used	...	} Passenger Engines.
Cost of	...	
Cost of Oil, Tallow, &c.	...	
Salaries and Wages	...	

Same details for Engines with Cattle Trains...	...	...
„ „	Merchandise Trains	...
„ „	Mineral Trains	...

Passenger Engines
Merchandise	„
Mineral	„

DRAFT FORM OF BOARD OF TRADE RAILWAY RETURNS—continued.

COACHING PLANT REPAIRS.

First Class, Composite, and Second Class	...	...	...
Third Class	...	...	...
Mail Vans	...	...	...
Horse Boxes	...	...	...
Carriage Trucks	...	...	...
Parcel Vans	...	...	...
Luggage and Break Vans	...	...	...

LIVE STOCK PLANT REPAIRS.

MERCHANDISE PLANT REPAIRS.

MINERAL PLANT REPAIRS.

REPAIRS OF WORKSHOPS & MACHINERY.

Workshops	}	Engines.	
Tools and Machinery			
Same for the Coaching Plant		...	...
„ Merchandise Plant		...	...
„ Mineral Plant		...	...

TRAFFIC CHARGES.

Passenger Traffic	...	...	...
Merchandise „	...	...	...
Mineral „	...	...	...

AUDIT, CLEARING HOUSE, AND TELEGRAPH EXPENSES.

Passenger Traffic	...	...	...
Live Stock „	...	...	...
Merchandise „	...	...	...
Mineral „	...	...	...

COST OF COLLECTION AND DELIVERY.

Passenger Train Parcels	...	...	...
Merchandise	...	...	...

In the Reports of the Companies, the Salaries and Office Expenses, Wages, Materials, would be given separately, in the several cases. The cost of Stores management is met by a percentage being added to the price of the stores supplied to the several departments.

The Reports of the Companies would give the Salaries and Office Expenses, Wages—Of Stations and Yards, Crossings, Signals. Cost of General Stores—Greasing, Clothing, Printing and Advertising, Waggon Covers and Ropes, Horses Shunting, Engines Shunting, of each class of traffic. Mileage and Demurrage of Carriages, Merchandise, and Mineral Waggons to be given in form of Dr. and Cr., and the balances added to or deducted from each class.

Telegraph to mean the general Telegraphic system, if any exist. The Telegraph in connection with Block working would be included, under Signals, and in its proper class, in Traffic Charges.

Over and above the salaries and wages of the staff employed, this would include all the expenses incidental to the duty—Harness, Provender, Stabling, Repairs of Lorries and Vans, &c., &c., which would appear in detail in the Reports of the Companies.

DRAFT FORM OF BOARD OF TRADE RAILWAY RETURNS—*continued*.

COMPENSATION.

Personal Injury	} Legal Expenses incurred in connection therewith to be included under the several heads.
Damage to and Loss of Parcels ...	
" " Merchandise ...	
Injury to and delay of Live Stock ...	

GOVERNMENT DUTY.

RATES AND TAXES.

Poor Rates	}
Borough Rates	
County Cess	
&c., &c.	

The Companies are complaining of the increasing burdens of local taxation they have to bear, and it would help to open up the question if more particulars were forthcoming, that the direction of the pressure might be traced, and more publicity given to it.

ESTABLISHMENT CHARGES.

In the Reports of the Companies this would include—
 Directors' Fees and Expenses,
 Fees to Shareholders' Auditors,
 Do. Public Accountants,
 Cost of Secretary's Department—including Accountant, Registrar, Treasurer,—all performing statutory and (final) financial business of the Company, but none other,
 Legal (corporate) expenses,
 Parliamentary do.
 Fire Insurance,
 Superannuation and Provident Funds,
 Banker's and General Interest (Revenue) Account, Debtor or Creditor.

CHARGES UPON REVENUE FOR LEASED
AND WORKED LINES.

The reports of the Companies would show the several rents paid for leased lines, and the percentage of receipts paid to owning Companies for lines worked, and like payments for joint lines, stations, &c.

NET RECEIPTS (TOTAL).

The Companies' statements of account and the Board of Trade Railway Returns in this, as in other salient features, would be in absolute agreement, which they are not at present.

FIRST CHARGES UPON NET REVENUE.

Interest on Debentures, Debenture Stock, Guaranteed and Preference Capital, &c.
--

The Reports of the Companies would show—

Interest on—
Debenture Loans—in detail,
Debenture Stock do.
Guaranteed Capital do.
Preferential Capital do.
Overdrawn Capital Account

DRAFT FORM OF BOARD OF TRADE RAILWAY RETURNS—*continued.*

NET RECEIPTS *from Traffic* available for Dividend on Ordinary Stock.

MISCELLANEOUS RECEIPTS and EXPENDITURE, other than Railway Traffic.

Canal Receipts—in detail
 Do. Expenditure do.
 Steamboat Receipts do.
 Do. Expenditure—in detail
 *Harbour and Dock Dues do.
 Rents of Houses, Lands, Stores—in detail
 Less Expenditure do.
 &c., &c.

Dividends from Stock in other Lines—in detail

*If incidental to railway traffic arrangements, to be included under this head, in traffic charges—passenger, merchandise, or mineral, as the case may be.

NET RECEIPTS from all sources, available for Dividend on Ordinary Stock.

In these final results the Reports of the Companies and the Board of Trade Railway Returns would be in perfect correspondence, dealing with the same figures, and giving the same results, which it is so desirable to have. There should be a perfect community of type throughout.

In the present form of the Board of Trade Returns, it is an impossibility to arrive accurately at the amount of gross capital involved in the several lines, or to obtain, with that precision which is necessary, the proportion of net receipts to capital, parent or gross. By means of the last six headings being duly attended to, and taken in connection with the primary statements of capital, the following definite results would be readily derivable:—(1.) The amount of capital represented by leased and worked lines, &c., would be put out of the calculation entirely—the amounts severally and collectively paid as rents, percentages of receipts, &c., would be all that need be considered (except, of course, collaterally in respect of the loss or gain in regard of each of the leased or worked lines; but to arrive at this the earnings and expenditure of each of them should be given separately from the parent line. This is a matter of detail and a very important one). (2.) Net Receipts (total), therefore, would then be the actual mean value of the parent capital. (3.) Interest on Debentures and Debenture Stock and Dividends on Guaranteed and Preferential capital being shown; (4.) Net Receipts from traffic would show the value of the undertaking, *as a railway*, to the ordinary stockholder. (5.) Canal capital being shown (in the capital account), and receipts as well as expenditure being shown, the value of the canals to the companies would be ascertained. So also of Steamboats, &c. Dividends from stock in other undertakings being also given separately would show—relative to the amount given in capital account—whether the investments were profitable. (6.) The final net receipts, from all sources, would give the ultimate actual value of the undertaking to the ordinary stockholder.

These several elements would appear clearly in all their relations and bearings, and the results derivable would be positive, instead of being, as now, surrounded with indefiniteness and doubt, and only approximate.

THE BIRMINGHAM WAGON COMPANY, Limited,

MANUFACTURE

RAILWAY CARRIAGES & WAGONS of every description,

For HIRE and SALE, by immediate or deferred payments.

They have also Wagons for Hire, capable of carrying Six, Eight, and Ten Tons, part of which are constructed specially for Shipping purposes.

Wagons in Working Order maintained by Contract.

Manufacturers also of **IRONWORK, WHEELS, and AXLES.**

EDMUND FOWLER, *Managing Director.*

WORKS: SMETHWICK, BIRMINGHAM.

WORKS PUBLISHED BY M^cCORQUODALE & CO.,

CARDINGTON STREET, LONDON, N.W.

THE RAILWAY & COMMERCIAL GAZETTEER OF ENGLAND, SCOTLAND, AND IRELAND. Eighth Edition. Royal 8vo., Cloth, 7s. 6d.

THE GENERAL CALCULATOR, to Facilitate the Invoicing and Checking of Accounts. Strongly bound in Canvas, 4s. 6d.

THE CARRIERS' IMPROVED READY RECKONER, for Cwts., Qrs., and Lbs. By ISAAC CLAPHAM. 3s.

THE INDEX TO OUR RAILWAY SYSTEM. Second Number. By WILLIAM FLEMING. 2s. 6d.

THE WAGES CALCULATOR, for 54 Hours per Week. Printed on Cloth Paper, 2s.

THE RAILWAY DIARY AND OFFICIAL DIRECTORY (Annually). Limp Cloth, 1s.

THE RAILWAY ALMANACK. In Sheet, 6d.

HAND-BOOK OF ALL THE STATIONS, JUNCTIONS, AND SIDINGS IN THE UNITED KINGDOM. By HENRY OLIVER and JOHN AIREY. Price—Boards, 4s. 6d., by post, 5s.; Cloth, 5s., by post, 5s. 6d.

AIREY'S NEW RAILWAY MAP OF ENGLAND. Forming a cheap and reliable Map of the whole of England and Wales, on a scale of 11 Miles to an Inch. Size, 3 ft. 6 in. by 2 ft. 6 in. Price—In Sheets, 5s.; Mounted on Linen, in Leather Case, 9s. 6d.; Mounted on Rollers, Varnished, 10s. 6d. Postage or carriage extra.

THE RAILWAY CLEARING HOUSE: Its Object, Work, and Results. The only published description of this National Establishment Fourth Edition. Price 6d.; by post 7d.

THE RAILWAY SHEET AND OFFICIAL GAZETTE. Published on the 15th of each Month. Price 1d.

Midland Great Western Railway OF IRELAND.

THE MOST DIRECT ROUTE FROM
DUBLIN to the West and North-West of IRELAND,

And forming Connections with the following Railways:

At ATHENRY, with the ATHENRY and ENNIS, and
ATHENRY and TUAM COMPANIES;

At ATHLONE and CLARA, with GREAT SOUTHERN and
WESTERN COMPANY;

At CAVAN and NAVAN, with the GREAT NORTHERN
COMPANY.

CHEAP CIRCULAR TOURS.

TOURIST RETURN TICKETS

Are issued from BROADSTONE STATION, DUBLIN, during the Season, available for One Month, enabling the holders to view the magnificent and picturesque Mountain and Lake District of

CONNEMARA,

The bold Cliffs and curious Caves of the

COASTS OF ACHILL AND CLARE,

The celebrated Chalybeate Spas of

LISDOONVARNA,

And the Romantic Scenery of the

LAKES OF KILLARNEY,

Offering unusual facilities to TOURISTS, ANGLERS, and SPORTSMEN.

N.B.—Tickets are also issued at KINGSBRIDGE STATION, DUBLIN, for the Round going first to Killarney, en route to Connemara.

* * * A considerable reduction is made in Price of Tickets for parties of Two to Six Passengers.

RETURN THROUGH TICKETS to Connemara, available for Two Months, are issued in all the principal Towns in ENGLAND and SCOTLAND.—(See *Tourist Programmes of the respective Railways and Steam Packet Companies for Fares and Conditions.*)

Tourists holding Through Tickets for Killarney and other parts of Ireland, may obtain, on arrival in Dublin, Supplemental Coupons at Reduced Fares, for the Connemara Tour, on application at BROADSTONE STATION.

An illustrated Hand-book of all the Circular Tours in connection with the Midland Great Western System, containing Skeleton Routes for Tours of a week or fortnight, a "Descriptive Guide" to the places named, and "Angler's Companion," with Colored Maps and Pictorial Charts of the Districts, may be obtained, with every further information required, on application to the Manager's Office, Broadstone Terminus Dublin—price 1s., post free.

BROADSTONE, DUBLIN, 1878.

J. E. WARD, Manager.

Great Northern; and Manchester Sheffield & Lincolnshire Railways.

IRELAND AND ENGLAND.

GOODS AND LIVE STOCK

Can be forwarded by the above-named Companies in connection with the Steam Navigation Companies trading between LIVERPOOL and DUBLIN, DROGHEDA, DUNDALK, NEWRY, BELFAST, LONDONDERRY, WATERFORD, and CORK, to and from the following places:—

Ardsey	Bury St. Edmonds	Gildersome	Holbeach	Manchester	Staleybridge
Ashby		Gt. Yarmouth	Horncastle	Market Rasen	Stamford
Alford	Cambridge	Gainsborough	Huntingdon	Mexboro'	Stowmarket
Ashton	Chapelton	Glossop	Hull	Newark	St. Albans
Barnet	(Yorks)	Gorton	Ipswich	Newmarket	St. Neots
Bardney	Chelmsford	Grantham	Kirkton-Lindsey	Norwich	St. Ives
Barnsley	Colchester	Grimby	Knottingley	Nottingham	Spalding
Batley	Conisboro'	Guide Bridge	Leeds	Northwich	Sudbury
Bawtrey	Dewsbury	Halifax	Lincoln	Oldham	Surfleet
Bingley	Doncaster	Halstead	LONDON—	Ossett	Swaffham
Biggleswade	Duffield	Harwich	King's Cross	Peterborough	Tuxford
Bingham	Dunstable	Hatfield	Louth	Retford	Ullesthorpe
Boston	Dereham	Haverhill	Luton	Rotherham	Warrington
Brigg	Ely	Hertford	Lowestoft	Sheffield	Wakefield
Bradford	Fakenham	Hitchin	Lynn	Sleaford	Worksope

And all places in connection with the Great Northern, Manchester Sheffield and Lincolnshire, South Yorkshire, and Great Eastern Railways.

Goods can also be forwarded to and from places on the Continent, to be shipped *via* Hamburg, Rotterdam, or Antwerp, by the Manchester Sheffield and Lincolnshire Co.'s Steamers sailing between Grimsby and these Ports.

NOTE.—Quick Trains are now run on Week Days between Liverpool (Central Station) and Manchester, and *vice versa*, in 45 minutes, commencing at 8.30 a.m. and at 30 minutes past every hour till 7½ p.m., and at 9½ and 11 p.m.

PASSENGERS

Are also BOOKED at THROUGH FARES by the City of Dublin Steam Packet Company's Steamers between

DUBLIN, VIA LIVERPOOL, AND THE ABOVE STATIONS.

PASSENGERS, GOODS, CATTLE, ETC.,

Booked by the above-named Companies will be sent by the Cavan, Leitrim, Longford, Mullingar, Kildare, St. Patrick, Windsor, Iron Duke, Eblana, or Trafalgar, one of which, or other first-class Steamer, appointed to sail between DUBLIN and LIVERPOOL, in connection with the above Railways, weather permitting, as under:—

DUBLIN TO LIVERPOOL.

LIVERPOOL TO DUBLIN.

EVERY EVENING (Sundays excepted at 7 o'clock).

AS PER PACKET COMPANY'S BILLS.

Goods and Cattle to be alongside THREE HOURS before the time of sailing.

Rates and all further information may be obtained from CHARLES SCOTTER, Goods Manager, Manchester Sheffield and Lincolnshire Railway, Manchester; J. ASHLEY, Goods Manager, Great Northern Railway, King's Cross, London; W. ENGELISH, Manchester Sheffield and Lincolnshire, Great Northern, and Midland Joint Railways, Central Station, and W. OATES, Brunswick Station, and 45, Old Hall Street, Liverpool; and Messrs. THOMSON, McKEAY & Co., Temple, Dale Street, Liverpool; W. SLOAN, Great Northern Railway, and J. HARDING, 2, Park Place, Leeds; W. COOK, Great Northern Railway, Bradford; J. SMITH, Great Northern Railway, Halifax; W. WIGGLESWORTH, Great Northern Railway, Batley; W. WIGGLESWORTH, Great Northern Railway, and Mr. CROSS, Manchester Sheffield and Lincolnshire Railway (Westgate Station), Wakefield; W. ALLISS, Great Northern Railway, Nottingham; McCREA and McFARLAND, Donegal Street, and J. McKEE, Donegal Quay, Belfast; DANIEL MARTIN, Dundalk; JOHN O'NEILL, Market Square, Navan; G. R. DONOVAN, 10, Academy Street, Cork; JOHN WALLIS, 33, Bachelor's Walk, Dublin; or from the undersigned.

Chief Offices in Ireland, 5 and 6, North Wall, Dublin.

JAMES HESKETH.

MANCHESTER SHEFFIELD & LINCOLNSHIRE RAILWAY.

QUICK AND REGULAR SERVICE

OF
FIRST CLASS STEAMERS FOR GOODS & PASSENGERS

FROM THE

Port of Grimsby to Hamburg, Rotterdam, and Antwerp.

STEAMERS are despatched from Grimsby (weather and other circumstances permitting) every WEDNESDAY and SATURDAY for HAMBURG, ROTTERDAM, and ANTWERP, after the arrival of the Train due at GRIMSBY DOCKS at 3.40 p.m. Returning from HAMBURG every Tue day and Friday; ROTTERDAM every Tuesday and Saturday; and from ANTWERP every Wednesday and SATURDAY.

These Steamers are of great carrying capacity, power, and speed, and the Saloons are fitted up with every convenience, affording the utmost comfort to Passengers.

Every information as to Rates of Freight, Fares, &c., will be given on application to

Mr. J. HESKETH, 5, North Wall, Dublin;

Messrs. McCREA & McFARLAND, Donegal Street, Belfast;

Messrs. JOHN SUTCLIFFE & SON, Shipping Agents, Grimsby; or to

Mr. C. SCOTTER, Manchester Sheffield and Lincolnshire Railway, Manchester.

R. G. UNDERDOWN, General Manager.

THE SHEFFIELD STEEL AND IRON WORKS.

BROWN, BAYLEY & DIXON,

L I M I T E D,

S H E F F I E L D,

MANUFACTURERS OF

BESSEMER STEEL RAILS, WELDLESS TIRES, AXLES,
SPRINGS, BUFFERS,

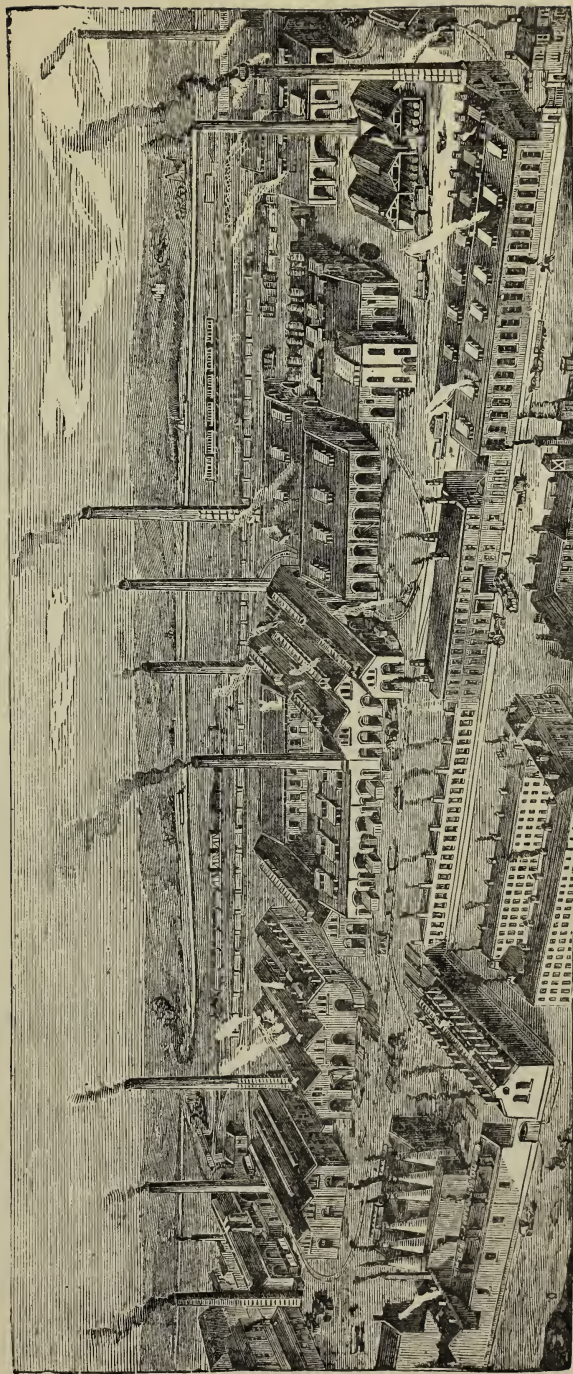
AND RAILWAY PLANT OF EVERY DESCRIPTION

And also of CAST, SHEAR and SPRING STEEL, FILES, SAWS, &c.
STEEL SHIP AND BOILER PLATES.

Steel Forgings of all descriptions.

LONDON OFFICE: 20, WALBROOK, E.C.

BROWN, BAYLEY, & DIXON, LIMITED.



The Sheffield Steel and Iron Works,

S H E F F I E L D.

LONDON OFFICE: 20, WALBROOK, E.C.

The Ebbw Vale Steel, Iron, & Coal Company, Limited, EBBW VALE, MONMOUTHSHIRE.

RESIDENT GENERAL MANAGER - - - JOHN F. ROWBOTHAM.

MANUFACTURERS OF IRON and STEEL RAILS, BAR and SHEET IRON, &c.

PROPRIETORS OF
EBBW VALE STEAM COAL, ABERCORN BLACK VEIN STEAM COAL,
ABERSYCHAN and PONTYPOOL HOUSE and STEAM COAL.

SHIPPING PORT, NEWPORT, MONMOUTHSHIRE.

WHARF AGENT, THOMAS JONES.

COAL AGENT, THOMAS B. BELL.

London Agents: JOSEPH ROBINSON & CO., 7, Lawrence Pountney Hill, E.C.
MANCHESTER HOUSE: 86, King Street.

THE ORIGINAL SOCIETY.—ESTABLISHED 1840.

THE GUARANTEE SOCIETY, No. 19, BIRCHIN LANE, CORNHILL, LONDON, E.C.

Empowered by Special Act of Parliament, 5 Victoria—Session 1842.

Suretiship undertaken for the fidelity of Persons in Situations of Trust, on the Yearly Payment of a small sum at a stipulated rate per centum.

CAPITAL, £100,000, fully Paid-up and Invested.

This Society was the first Public Company established in Great Britain to obviate the inconvenience and defects of Suretiship by Private Bondsmen, its Security being adopted by

HER MAJESTY'S GOVERNMENT,

by the Bank of England, the Bank of Ireland, the Council of the Duchy of Cornwall, the Secretary of State in Council for India, the Court of Chancery, the Local Government Board, the Corporation of the City of London, the Principal Bankers, Railway Companies, Public Companies, and Commercial Firms in the United Kingdom.

All necessary information can be had of the Secretary and the respective Agents of the Society.
JAMES MUZIO, Secretary.

THE MERSEY WHEEL AND AXLE WORKS CO., STOURBRIDGE,

MANUFACTURERS OF WROUGHT AND CAST-IRON BOSS

RAILWAY WHEELS AND AXLES;

ALSO,

FORGINGS AND CASTINGS.

REPAIRS DONE TO WHEELS.

London Office: 63, Queen Victoria Street, E.C.
TAITE & CARLTON, Agents.

*The Gold Medal, Paris Exhibition, 1867, and Diplome d'Honneur
at Havre Exhibition, 1868.*

BARROW HÆMATITE STEEL COMPANY, LIMITED.

HEAD OFFICE AND WORKS:
BARROW-IN-FURNESS, LANCASHIRE.

LONDON OFFICE:
14, Great George Street, Westminster.

Directors.

HIS GRACE THE DUKE OF DEVONSHIRE, *Chairman.*

LORD FREDERICK C. CAVENDISH, M.P.

HENRY WILLIAM SCHNEIDER, Esq.

WILLIAM CURREY, Esq.

FREDERICK ILTID NICHOLL, Esq.

JOHN FELL, Esq.

SIR JAMES RAMSDEN, *Managing Director.*

Secretary.

JAMES BIGG, Esq.

Manager.

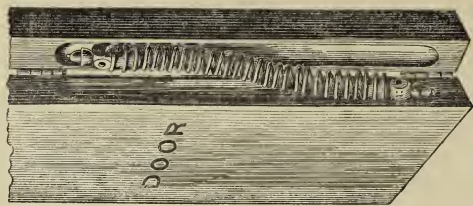
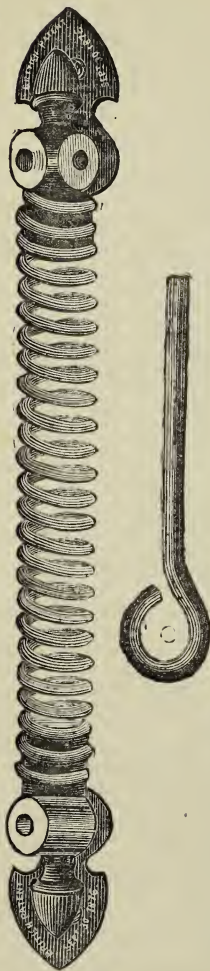
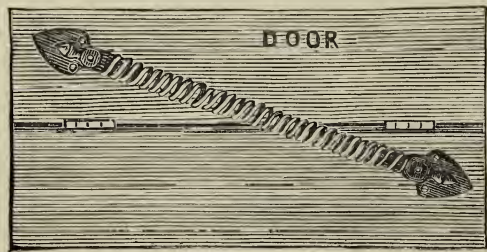
J. T. SMITH, Esq.

THE BARROW HÆMATITE STEEL CO., LIMITED,

MANUFACTURE

Steel Rails, Weldless Tires, Axles, Plates for Shipbuilding, Boilers, Girders, Bridges, Roofs, Bars, Angles, Guns, and Forgings of every description in Steel; and in addition supply the Hæmatite Ore and Pig Iron from which the Steel is exclusively made.

THE AMERICAN PREMIUM DOOR AND GATE SPRING.



The Simplest, Neatest, and most Effective Door Spring ever made.

The only spirally twisted Door Spring, on Pivots, that will either open or close a Door, and can be attached or detached without removing the Screws; and, if required, may be hidden from sight.

NEEDS NO SKILL TO APPLY IT, AND ALWAYS IN ORDER.

FULL DIRECTIONS WITH EACH SPRING.

All Manufactured by Messrs **SALTER & CO.**, the well-known Spring Makers.

HIGHLY RECOMMENDED BY THE FOLLOWING PAPERS:—*Builder*; *Architect*; *Building News*; *Ironmonger*; *Royal Institute of British Architects*; *Society of Arts Journal*; *Illustrated Carpenter and Builder*; *European Mail*; *British Architect* and *Northern Engineer*; *British Trade Journal*; *Herauld's Railway and Commercial Journal*; &c. &c. &c.

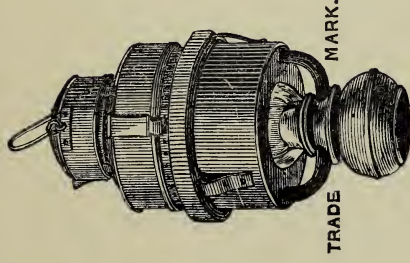
Proprietor: **ALEXR. KELLY**, 59, Mark Lane, London; and 3, Cope Street, Dublin.
Agents for Railways, &c.: Messrs **W. S. W. ASTBURY & CO.**, 48, King Street, Manchester. Contractors to Railway & Steam Ship Companies.

THE IMPERIAL PATENT RAILWAY CARRIAGE LAMP.

Burns pure Petroleum with perfect safety.

No Glass Chimney used, and all parts interchangeable.

Saves 50 per cent. in cost of Oil and Labour.



Burns 20 Hours or more, according to size of bulb, with a brilliant, steady light, casting no shadow.

Existing stocks of Lamps converted into "Imperial," at moderate rates.

Reference kindly permitted to the Midland Great Western, and the Great Southern and Western Railways, Ireland.

SOLE AGENT:

**ALEX. KELLY, 59, Mark Lane, London.
And 3, Cope Street, Dublin.**

MANUFACTURED BY GEO. BURT, 10, GT. CHARLES STREET, BIRMINGHAM.



3 0112 061414725